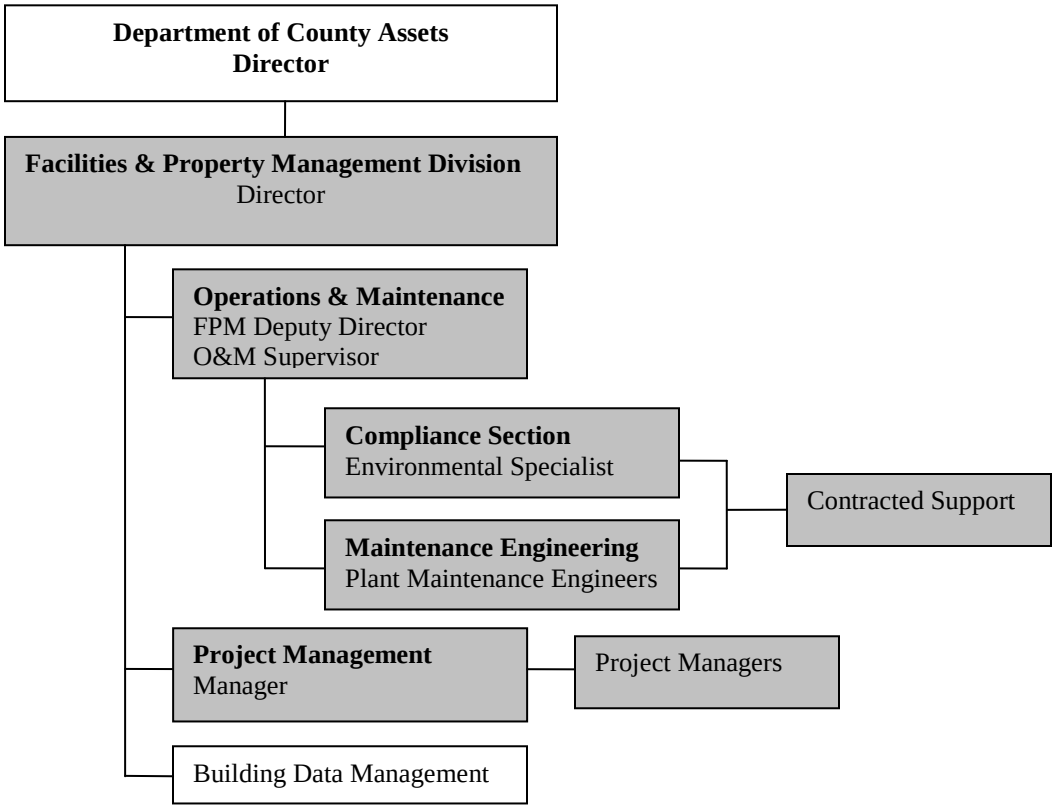
# Appendix D
# Exhibit Log

# Exhibit 1
# County Organizational Charts

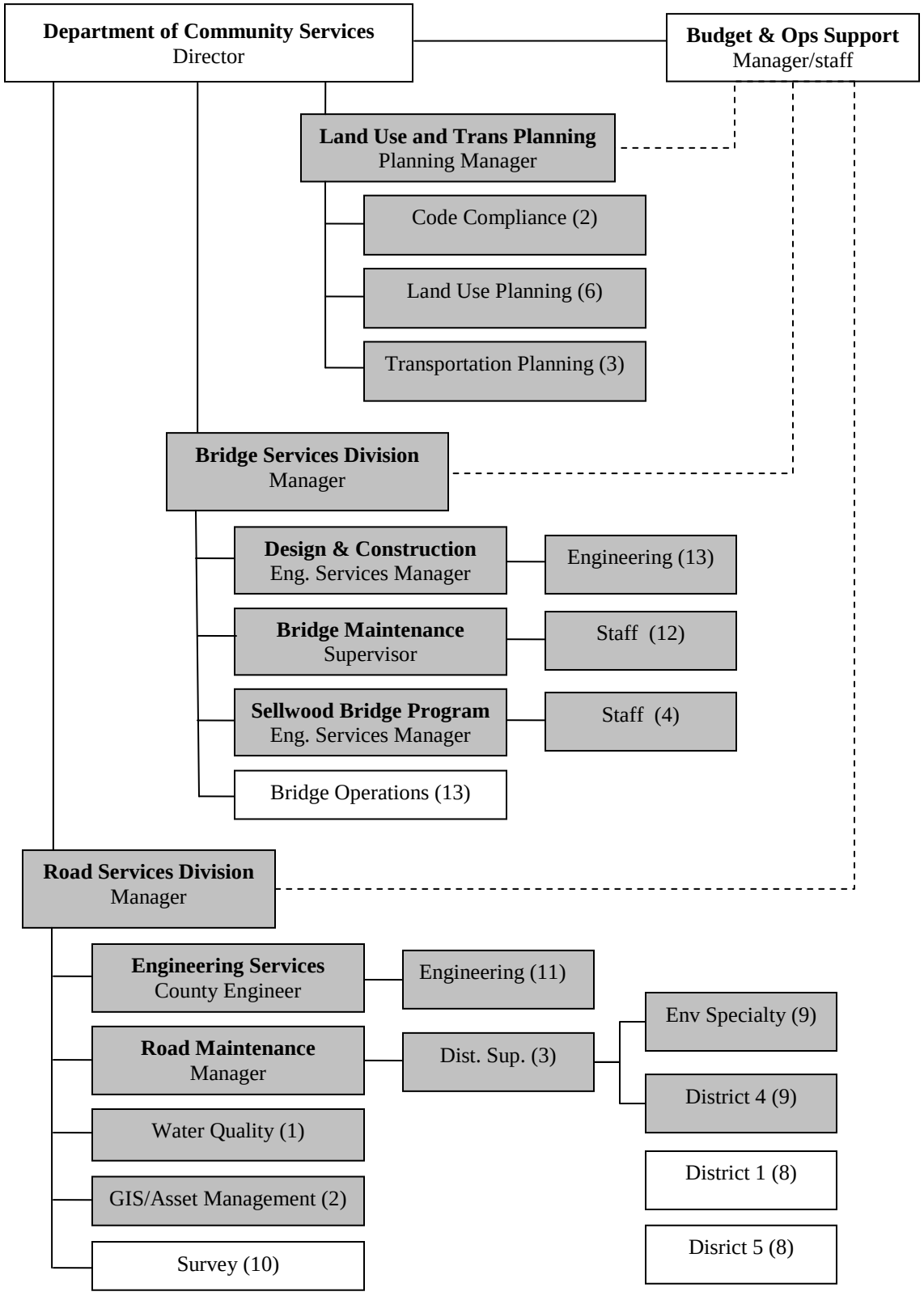
## Multnomah County Facilities & Property Management Organizational Chart

(4/8/13)



## Multnomah County Land Use & Transportation Organizational Chart

(4/8/13)



# Exhibit 2
# EPA Records Request

**EPA MS4 PROGRAM COMPLIANCE INSPECTION - Multnomah County, Oregon**
**May 15-16, 2013**
**Pre Inspection Questionnaire and Records Request**

| Program Management/Kick-off Meeting | | | | | | |
|---|---|---|---|---|---|---|
| **Item No.** | **Document(s)/Data Requested** | **Document/Data Provided (please select Yes/No)** | **Formal Title(s) of Document(s) Provided and Date/Version** | **Department Responsible for Document(s)** | **Web Link to Document(s) Provided (Yes/No; please provide web address information)** | **Data Entry/Additional Information Regarding Requested Item (Comments/Notes)** |
| 1 | Stormwater Management Program (SWMP) Plan (Version currently operating under) | | | | | |
| 2 | MS4 Annual Report (most recent Reporting Year) | | | | | |
| 3 | Program organizational chart and/or a description of the departments and personnel involved in the implementation of your MS4 program and their responsibilities | | | | | |
| 4 | Map of the permitted area and receiving waters, basins, and segments, including any TMDL or 303(d) listed waters | | | | | |
| 5 | Any formal "interagency" agreements with other entities/local governments for implementation of your MS4 programs (e.g., memoranda of understanding) | | | | | |
| 6 | MS4 Annual Expenditure (most recent Fiscal Year) | | | | | |
| 7 | MS4 Budget (most recent Fiscal Year) | | | | | |
| 8 | Primary MS4 Funding Source | | | | | |
| 9 | Number of Major MS4 Outfalls (Indicate Estimated or Measured) | | | | | |

| Illicit Discharge Detection and Elimination | | | | | | |
|---|---|---|---|---|---|---|
| **Please Provide a Description of the Departments/Divisions Involved in Program Element and Brief Description of Responsibilities:** | | | | | | |
| **Item No.** | **Document(s) Requested** | **Document Provided (please select Yes/No)** | **Formal Title(s) of Document(s) Provided and Date/Version** | **Department Responsible for Document(s)** | **Web Link to Document(s) Provided (Yes/No; please provide web address information)** | **Additional Information Regarding Requested Item (Comments/Notes)** |
| 10 | Ordinance(s) or regulatory mechanism(s) prohibiting non-stormwater discharges to the MS4 | | | | | |
| 11 | Documentation of illicit discharge complaints or referrals and illicit discharge response and investigation activities. | | | | | |
| 12 | Documentation of procedures implemented to prevent, contain, respond to and mitigate spills to the MS4. | | | | | |
| 13 | Inventory of reported incidents of illicit discharges/connections/spills and resolution (most recent Reporting Year) | | | | | |
| 14 | Employee/maintenance personnel training plan/program, records and syllabus pertaining to IDDE (most recent Reporting Year) | | | | | |
| 15 | At time of audit, provide onsite demonstration of storm drain system mapping tools. Emphasize layers/mapping that informs the MS4 program activities (e.g., storm drain system, structural controls, outfalls, receiving waters, municipality connection points, etc.) | | | | | |
| 16 | List of priority locations in MS4 system | | | | | |
| 17 | Identification process for priority locations for dry-weather inspection activities | | | | | |
| 18 | Documentation of annual dry-weather inspection activities including identified priority locations (most recent Reporting Year) | | | | | |
| 19 | Documentation of Enforcement Response (ERP) Plan or similar document | | | | | |
| 20 | Example/case file of an illicit discharge incident where enforcement was used (ideally full extent of enforcement authority) | | | | | |
| 21 | Documentation of pollutant parameter action levels and examples where they have triggered further investigation to identify sources of illicit discharges | | | | | |

| Pollution Prevention for Municipal Operations | | | | | | |
|---|---|---|---|---|---|---|
| **Please Provide a Description of the Departments/Divisions Involved in Program Element and Brief Description of Responsibilities:** | | | | | | |
| **Item No.** | **Document(s) Requested** | **Document Provided (please select Yes/No)** | **Formal Title(s) of Document(s) Provided and Date/Version** | **Department Responsible for Document(s)** | **Web Link to Document(s) Provided (Yes/No; please provide web address information)** | **Additional Information Regarding Requested Item (Comments/Notes)** |
| 22 | Map/inventory of the City facilities and properties within the permitted area (e.g., road maintenance facilities, stockpile sites, storage and material handling areas, etc.) | | | | | |
| 23 | Example Facility Stormwater Pollution Prevention Plan (SWPPP) document—EPA Inspection Team may select additional sites at the time of the inspection | | | | | |
| 24 | List of all municipal facilities that that treat, store or transport municipal waste, not already covered under an individual permit, that are owned or operated by the City | | | | | |
| 25 | Records of City facility/yard inspections conducted for storm water purposes (most recent Reporting Year)—EPA Inspection Team may select specific sites at the time of the inspection | | | | | |
| 26 | Documentation of practices, policies and procedures to reduce pollutants on City-owned lands including: parks, fleet and building maintenance facilities, transportation systems and fire-fighting training facilities. | | | | | |
| 27 | Maintenance standards and records of inspections and maintenance of City facilities including: pipes and culverts, catch basins, inlets, and ditches (Examples from current Permit term) | | | | | |
| 28 | Documentation of practices, policies and procedures to reduce pollutants discharged from public streets, roads, and highways, including as a result of deicing activities. | | | | | |
| 29 | O & M employee training plan/program, records, and syllabus pertaining to pollution prevention/good housekeeping (most recent Reporting Year) | | | | | |
| 30 | Documentation for a management program to control and minimize the use and application of pesticides, herbicides and fertilizers on City property. | | | | | |
| 31 | Documentation of a program to prevent or control the release of materials related to fire-fighting training activities. | | | | | |
| 32 | Documentation feasibility assessment of City owned flood control projects for retrofitting pollutant removal capabilities. | | | | | |

| Construction Site Runoff Control | | | | | | |
|---|---|---|---|---|---|---|
| **Please Provide a Description of the Departments/Divisions Involved in Program Element and Brief Description of Responsibilities:** | | | | | | |
| **Item No.** | **Document(s) Requested** | **Document Provided (please select Yes/No)** | **Formal Title(s) of Document(s) Provided and Date/Version** | **Department Responsible for Document(s)** | **Web Link to Document(s) Provided (Yes/No; please provide web address information)** | **Additional Information Regarding Requested Item (Comments/Notes)** |
| 33 | Map/inventory of current active construction sites in the permitted area showing location (differentiating City sponsored from private projects) | | | | | |
| 34 | All construction-related ordinances and regulatory mechanisms pertaining to erosion, sediment, and waste control | | | | | |
| 35 | Requirements for construction site operators to prevent or control non-stormwater waste (such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste) | | | | | |
| 36 | Example erosion prevention and sediment control site plans | | | | | |
| 37 | Procedures for erosion prevention and sediment control site plan review considering potential water quality impacts (including checklists used for reviews) | | | | | |
| 38 | Construction BMP Manual or standards | | | | | |
| 39 | Procedures for site inspection of erosion prevention and sediment control plan control measures | | | | | |
| 40 | Construction inspection field checklist | | | | | |
| 40 | Construction inspection records and documentation (most recent Reporting Year)—EPA Audit Team will select specific sites at the time of the audit | | | | | |
| 40 | Documentation of Enforcement Response (ERP) Plan or similar document | | | | | |
| 40 | Example/case file of a construction site issue where enforcement of ordinance was used (ideally full extent of enforcement authority) | | | | | |

| In Addition to the Numbered Items Requested Above: Provide Any Other Documents or Tools You Believe Demonstrate Program Development and Structure. | | | | |
|---|---|---|---|---|
| **Item No.** | **Formal Title of Document Provided (including Date/Version)** | **Department Responsible for Document** | **Web Link to Document Provided** | **Additional Information Regarding Document Provided (Comments/Notes)** |
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# Exhibit 3
# Multnomah County Response Inventory

**EPA MS4 PROGRAM COMPLIANCE INSPECTION - Multnomah County, Oregon**
**May 14-15, 2013**
**Pre Inspection Questionnaire and Records Request - Compiled by Roy Iwai, Water Quality Program, Multnomah County Land Use and Transportation**

| Program Management/Kick-off Meeting | | | | | | |
|---|---|---|---|---|---|---|
| **Item No.** | **Document(s)/Data Requested** | **Document/Data Provided (please select Yes/No)** | **Formal Title(s) of Document(s) Provided and Date/Version** | **Department Responsible for Document(s)** | **Web Link to Document(s) Provided (Yes/No; please provide web address information)** | **Data Entry/Additional Information Regarding Requested Item (Comments/Notes)** |
| 1 | Stormwater Management Program (SWMP) Plan (Version currently operating under) | Yes | Multnomah County Stormwater Management Plan - National Pollutant Discharge Elimination System (NPDES) Municipal Separate Stormwater System (MS4) Permit - April 2011 | Community Services - Land Use and Transportation Division | http://web.multco.us/sites/default/files/roads/documents/mc_swmp_april_2011.pdf | |
| 2 | MS4 Annual Report (most recent Reporting Year) | Yes | Multnomah County NPDES MS4 Phase I Permit - Stormwater Management Program: Annual Report 2012 - Permit Year 17 | Community Services - Land Use and Transportation Division | https://web.multco.us/sites/default/files/roads/documents/npdes_2012_report.pdf | The electronic copy included in the packet contains the NDPES Annual report, environmental monitoring data, and the Sandy/Willamette TMDL report. |
| 3 | Program organizational chart and/or a description of the departments and personnel involved in the implementation of your MS4 program and their responsibilities | Yes | Facilities & Property Management Organizational Chart and Land Use & Transportation Organization Chart - 4/8/13 | Community Services - Land Use and Transportation Division; County Assets - Facilities and Property Management | | |
| 4 | Map of the permitted area and receiving waters, basins, and segments, including any TMDL or 303(d) listed waters | Yes | Multnomah County NPDES Permit Areas and Watersheds - April 2013; Multnomah County Arterials and Collector Roads in NPDES Area - April 2013 | Community Services - Land Use and Transportation Division | | |
| 5 | Any formal "interagency" agreements with other entities/local governments for implementation of your MS4 programs (e.g., memoranda of understanding) | Yes | Gresham NPDES IGA 2011; Regional Coalition IGA 2010; Fisrt Amendment to Intergovernmental Agreement to Transer Land Use Planning Responsibilities - (Urban Planning Area Agreement) - 2005; Westside Pocket Agreement 2010 and Contract Amendment No.13 for Westside Maintenance, 2011; Expansion of Service Authority for Unified Sewage Agency of Washington County - Multnomah County Resolution #89-43 | Community Services - Land Use and Transportation Division | | |
| 6 | MS4 Annual Expenditure (most recent Fiscal Year) | Yes | Multnomah County NPDES MS4 Phase I Permit - Stormwater Management Program: Annual Report 2012 - Permit Year 17 | Community Services - Land Use and Transportation Division | https://web.multco.us/sites/default/files/roads/documents/npdes_2012_report.pdf | Annual Report 2012, page 22 |
| 7 | MS4 Budget (most recent Fiscal Year) | Yes | Multnomah County NPDES MS4 Phase I Permit - Stormwater Management Program: Annual Report 2012 - Permit Year 17 | Community Services - Land Use and Transportation Division | https://web.multco.us/sites/default/files/roads/documents/npdes_2012_report.pdf | Annual Report 2012, page 22 |
| 8 | Primary MS4 Funding Source | Yes | Multnomah County NPDES MS4 Phase I Permit - Stormwater Management Program: Annual Report 2012 - Permit Year 17 | Community Services - Land Use and Transportation Division | https://web.multco.us/sites/default/files/roads/documents/npdes_2012_report.pdf | Annual Report 2012, page 22 |
| 9 | Number of Major MS4 Outfalls (Indicate Estimated or Measured) | Yes | Multnomah County - Illicit Discharge Detection and Elimination Program - July 2012 | Community Services - Land Use and Transportation Division | | |

| Illicit Discharge Detection and Elimination | | | | | | |
|---|---|---|---|---|---|---|
| **Please Provide a Description of the Departments/Divisions Involved in Program Element and Brief Description of Responsibilities:** | | | | | | |
| **Item No.** | **Document(s) Requested** | **Document Provided (please select Yes/No)** | **Formal Title(s) of Document(s) Provided and Date/Version** | **Department Responsible for Document(s)** | **Web Link to Document(s) Provided (Yes/No; please provide web address information)** | **Additional Information Regarding Requested Item (Comments/Notes)** |
| 10 | Ordinance(s) or regulatory mechanism(s) prohibiting non-stormwater discharges to the MS4 | Yes | Multnomah County - Legal Authority to Implement NPDES MS4 Phase I Permit - 2010 | Community Services - Land Use and Transportation Division | | |
| 11 | Documentation of illicit discharge complaints or referrals and illicit discharge response and investigation activities. | No | | | | No incidents have occurred since program was developed. |
| 12 | Documentation of procedures implemented to prevent, contain, respond to and mitigate spills to the MS4. | Yes | Multnomah County - Illicit Discharge Detection and Elimination Program - July 2012 | Community Services - Land Use and Transportation Division | | |
| 13 | Inventory of reported incidents of illicit discharges/connections/spills and resolution (most recent Reporting Year) | Yes | Multnomah County NPDES MS4 Phase I Permit - Stormwater Management Program: Annual Report 2012 - Permit Year 17 | Community Services - Land Use and Transportation Division | | |
| 14 | Employee/maintenance personnel training plan/program, records and syllabus pertaining to IDDE (most recent Reporting Year) | No | | | | IDDE program is managed by the Water Quality Program, and all inspections are conducted by the Water Resources Specialist, staff to the Water Quality Program. |
| 15 | At time of audit, provide onsite demonstration of storm drain system mapping tools. Emphasize layers/mapping that informs the MS4 program activities (e.g., storm drain system, structural controls, outfalls, receiving waters, municipality connection points, etc.) | No | | | | Drainage system mapping tools will be demonstrated during office visit. |
| 16 | List of priority locations in MS4 system | Yes | Multnomah County - Illicit Discharge Detection and Elimination Program - July 2012 | Community Services - Land Use and Transportation Division | | |
| 17 | Identification process for priority locations for dry-weather inspection activities | Yes | Multnomah County - Illicit Discharge Detection and Elimination Program - July 2012 | Community Services - Land Use and Transportation Division | | |
| 18 | Documentation of annual dry-weather inspection activities including identified priority locations (most recent Reporting Year) | Yes | IDDE Dry Weather Screening Data | Community Services - Land Use and Transportation Division | | |
| 19 | Documentation of Enforcement Response (ERP) Plan or similar document | Yes | Multnomah County - Illicit Discharge Detection and Elimination Program - July 2012 | Community Services - Land Use and Transportation Division | | |
| 20 | Example/case file of an illicit discharge incident where enforcement was used (ideally full extent of enforcement authority) | No | | | | No incidents have occurred since the program was developed. |
| 21 | Documentation of pollutant parameter action levels and examples where they have triggered further investigation to identify sources of illicit discharges | Yes | Multnomah County - Illicit Discharge Detection and Elimination Program - July 2012 | Community Services - Land Use and Transportation Division | | No incidents have occurred since the program was developed. |

| Pollution Prevention for Municipal Operations | | | | | | |
|---|---|---|---|---|---|---|
| **Please Provide a Description of the Departments/Divisions Involved in Program Element and Brief Description of Responsibilities:** | | | | | | |
| **Item No.** | **Document(s) Requested** | **Document Provided (please select Yes/No)** | **Formal Title(s) of Document(s) Provided and Date/Version** | **Department Responsible for Document(s)** | **Web Link to Document(s) Provided (Yes/No; please provide web address information)** | **Additional Information Regarding Requested Item (Comments/Notes)** |
| 22 | Map/inventory of the City facilities and properties within the permitted area (e.g., road maintenance facilities, stockpile sites, storage and material handling areas, etc.) | No | | | | The County does not operate any Road Maintenance facilities in the NPDES permit area. |
| 23 | Example Facility Stormwater Pollution Prevention Plan (SWPPP) document—EPA Inspection Team may select additional sites at the time of the inspection | No | | | | The County does not operate any Road Maintenance facilities in the NPDES permit area. |
| 24 | List of all municipal facilities that that treat, store or transport municipal waste, not already covered under an individual permit, that are owned or operated by the City | No | | | | The County does not operate any Road Maintenance facilities in the NPDES permit area. |
| 25 | Records of City facility/yard inspections conducted for storm water purposes (most recent Reporting Year)—EPA Inspection Team may select specific sites at the time of the inspection | No | | | | The County does not operate any Road Maintenance facilities in the NPDES permit area. |
| 26 | Documentation of practices, policies and procedures to reduce pollutants on City-owned lands including: parks, fleet and building maintenance facilities, transportation systems and fire-fighting training facilities. | Yes | Multnomah County Road Maintenance and Operations Manual - October 2012; Multnomah County, Oregon, Facilities and Property Management Policy and Procedure - Storm Water Management Policy Number FPM-ENV15, 2002; | Community Services - Land Use and Transportation Division; County Assets - Facilities and Property Management | | |
| 27 | Maintenance standards and records of inspections and maintenance of City facilities including: pipes and culverts, catch basins, inlets, and ditches (Examples from current Permit term) | Yes | Multnomah County Road Services - Catch Basin and Street Sweeping Frequency Criteria | Community Services - Land Use and Transportation Division | | We will discuss the progress of this project with maps and data during the site visit. |
| 28 | Documentation of practices, policies and procedures to reduce pollutants discharged from public streets, roads, and highways, including as a result of deicing activities. | Yes | Multnomah County Stormwater Management Plan - National Pollutant Discharge Elimination System (NPDES) Municipal Separate Stormwater System (MS4) Permit - April 2011 | Community Services - Land Use and Transportation Division | | |
| 29 | O & M employee training plan/program, records, and syllabus pertaining to pollution prevention/good housekeeping (most recent Reporting Year) | No | Multnomah County's RMOM Field Guide - Routine Road Maintenance Best Management Practices | Community Services - Land Use and Transportation Division | | We will discuss the Multnomah County RMOM program during the site visit. Both the Field Guide and the relationship to the full RMOM will be discussed. |
| 30 | Documentation for a management program to control and minimize the use and application of pesticides, herbicides and fertilizers on City property. | Yes | Multnomah County - Integrated Vegetation Management Plan For Right-of-Ways - August 2009; Multnomah County Dept of County Assets - Facilities and Property Management Division, Policy and Procedure - Fertilizer, Herbicide, and Pesticide Management Policy ENV-17 | Community Services - Land Use and Transportation Division; County Assets - Facilities and Property Management | http://web.multco.us/sites/default/files/roads/documents/ivm.final_.2009.pdf | |
| 31 | Documentation of a program to prevent or control the release of materials related to fire-fighting training activities. | No | | | | The County does not have a fire department. |
| 32 | Documentation feasibility assessment of City owned flood control projects for retrofitting pollutant removal capabilities. | No | | | | The County will complete a Stormwater Retrofit Strategy by November, 2014. |

| Construction Site Runoff Control | | | | | | |
|---|---|---|---|---|---|---|
| **Please Provide a Description of the Departments/Divisions Involved in Program Element and Brief Description of Responsibilities:** | | | | | | |
| **Item No.** | **Document(s) Requested** | **Document Provided (please select Yes/No)** | **Formal Title(s) of Document(s) Provided and Date/Version** | **Department Responsible for Document(s)** | **Web Link to Document(s) Provided (Yes/No; please provide web address information)** | **Additional Information Regarding Requested Item (Comments/Notes)** |
| 33 | Map/inventory of current active construction sites in the permitted area showing location (differentiating City sponsored from private projects) | Yes | Multnomah County Construction Sites in the NPDES Permit Area - April 2013 | | | |
| 34 | All construction-related ordinances and regulatory mechanisms pertaining to erosion, sediment, and waste control | No | | | | This document will be available during the visit to Multnomah County offices. |
| 35 | Requirements for construction site operators to prevent or control non-stormwater waste (such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste) | No | | | | This document will be available during the visit to Multnomah County offices. |
| 36 | Example erosion prevention and sediment control site plans | No | | | | This document will be available during the visit to Multnomah County offices. |
| 37 | Procedures for erosion prevention and sediment control site plan review considering potential water quality impacts (including checklists used for reviews) | No | | | | This document will be available during the visit to Multnomah County offices. |
| 38 | Construction BMP Manual or standards | No | | | | This document will be available during the visit to Multnomah County offices. |
| 39 | Procedures for site inspection of erosion prevention and sediment control plan control measures | No | | | | This document will be available during the visit to Multnomah County offices. |
| 40 | Construction inspection field checklist | No | | | | This document will be available during the visit to Multnomah County offices. |
| 40 | Construction inspection records and documentation (most recent Reporting Year)—EPA Audit Team will select specific sites at the time of the audit | No | | | | This document will be available during the visit to Multnomah County offices. |
| 40 | Documentation of Enforcement Response (ERP) Plan or similar document | No | | | | This document will be available during the visit to Multnomah County offices. |
| 40 | Example/case file of a construction site issue where enforcement of ordinance was used (ideally full extent of enforcement authority) | No | | | | This document will be available during the visit to Multnomah County offices. |

| In Addition to the Numbered Items Requested Above: Provide Any Other Documents or Tools You Believe Demonstrate Program Development and Structure. | | | | |
|---|---|---|---|---|
| **Item No.** | **Formal Title of Document Provided (including Date/Version)** | **Department Responsible for** | **Web Link to Document Provided** | **Additional Information Regarding Document Provided** |
| 41 | Multnomah County - Emergency Spill Response Plan - November 2012 | County Management - Finance and Risk Management | | |
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# Exhibit 4
# Catch basin cleaning and street sweeping explanatory memo to ORDEQ from the County dated June 22, 2011

**Department of Community Services**
**MULTNOMAH COUNTY OREGON**

**Land Use and Transportation Program**
**1620 SE 190th Avenue**
**Portland, Oregon 97233-5910**
**(503) 988-5050**

Benjamin Benninghoff
Oregon Department of Environmental Quality
Headquarters Office
811 SW 6th Avenue
Portland, OR 97204-1390

June 22, 2011

SUBJECT: Catch basin cleaning and street sweeping criteria

Dear Mr. Benninghoff,

The Multnomah County NPDES MS4 Phase I permit Stormwater Management Plan identifies two related best management practices (BMPs) for pollutant removal from roadways: Catch Basin Cleaning (OM-2) and Street Sweeping (OM-3). The measurable goals for these BMPs identified the need to develop criteria to establish the frequencies of each activity to maintain effective pollutant removal, by July 1, 2011.

The attached paper describes the relationship between these activities and identifies a strategy to collect sediment accumulation data and evaluate results. The criteria for adaptively managing these activities are also included. By following the tasks and evaluation process, we attempt to increase efficiency and effectiveness of these BMPs, to ensure that our program meets the "maximum extent practicable" standard. There are many variables that must be considered and further adaptive management may be needed to fine tune this pilot strategy in the future, however, we are certain that our efforts will improve the current program and meet the stated goals.

If you have any questions regarding this analysis and the options given, please contact Roy Iwai, Water Resources Specialist, at (503) 988-5050 ext 28031, or by email at roy.iwai@multco.us. We look forward to discussing this element of the County's program as well as the overall adaptive management process in the future.

Sincerely,

Kim Peoples
Road Services Manager

MULTNOMAH COUNTY

**Multnomah County Road Services**

## Catch Basin and Street Sweeping Frequency Criteria

Issue: *Incorporate sediment accumulation and removal rates from street sweeping and catch basin cleaning into an adaptive approach to improve BMP effectiveness.*

Goal: *Develop a strategy to determine the appropriate street sweeping and catch basin cleaning frequency to balance the performance of the catch basins with efficiencies in the maintenance tasks.*

### Background

Catch basins are not designed to efficiently trap roadway sediment, however, they do provide significant reductions of sediment and associated pollutants if properly maintained. Studies have shown that sediment trapping efficiency of a catch basin can approach 75% when they are cleaned out on a semi-annual or annual basis. The removal rates decrease by about 50% when the catch basin reaches 50% capacity. A catch basin loses its effectiveness in capturing sediment when it reaches 60% of its capacity. Catch basin cleaning frequency must therefore consider how full a catch basin is to maintain the performance of the device.

Street sweeping provides a water quality benefit by removing a range of particle sizes from the roadway. Vacuum sweepers are capable of capturing fine particles (silt and fine sand) that often are associated with metals, PAHs and other pollutants, as well as the medium and coarse (sand) fractions of road sediment. Althought vacuum sweeping is conducted largely for road safety and aethetic reasons, it serves to capture a sediment fraction which catch basins are not designed to trap, and can potentially reduce catch basin cleaning frequency by removing sediment that would otherwise be directed into a catch basin.

Studies show that very frequent street sweeping (weekly) and catch basin cleaning (monthly) can remove more total sediment than less frequent cleaning, despite that the sediment removed during each maintenance event decreases with increased frequency. The costs associated with such an intense level of maintenance, however, are not practicable with the current budgeting for Multnomah County Road Services. Reducing pollutants to the *maximum extent practicable* means that Road Services must achieve a balance of all road maintenance tasks and contracts to achieve the best results with the avaiable staff and equipment resources. A strategy to maximize the pollutant reduction within the means of the current structural system and resources is needed to improve the program in an adaptive approach.

The current County catch basin maintenance program calls for cleaning catch basins twice a year. This level of maintenance is conducted uniformly across the County catch basins in the NPDES permit area without considering differences in sediment input, traffic, land use, or other metrics at a detailed level. However, in certain locations where known chronic problems occur, catch basin cleaning is done more often – up to six times a year. Measures of the total amount of debris collected has been recorded in the past, but this figure has not been useful to better understand the catch basin network and improve the program. A fine tuning of both catch basin cleaning paired with street sweeping can be achieved using new technologies, including GPS tracking, on-board computing, and GIS mapping software.

**Goal and hypthesis**

The goal for the program is to identify a catch basin frequency that ensures that cleaning is done before the catch basin reaches 60% capacity, and if possible, to clean before a sump reaches 50% capacity.

The hypothesis is that current program of sweeping (approximately 20-times per year) and catch basin cleaning (twice per year) achieves this goal.

**Maintenance tasks**

1. *Determine the capacity of each catch basin*

   The depth of the catch basin, measured from the bottom of the catch basin to the outlet pipe ($a$), is used as a surrogate to the volume (capacity) of sump (Fig.1). This depth was measured after the catch basin was cleaned during the summer of 2010. To facilitate estimation of catch basin fullness when sediment obscures the bottom of the sump, a measurement from the catch basin grate to the bottom of the sump was also recorded ($b$). These data are stored in a GIS map of catch basins.

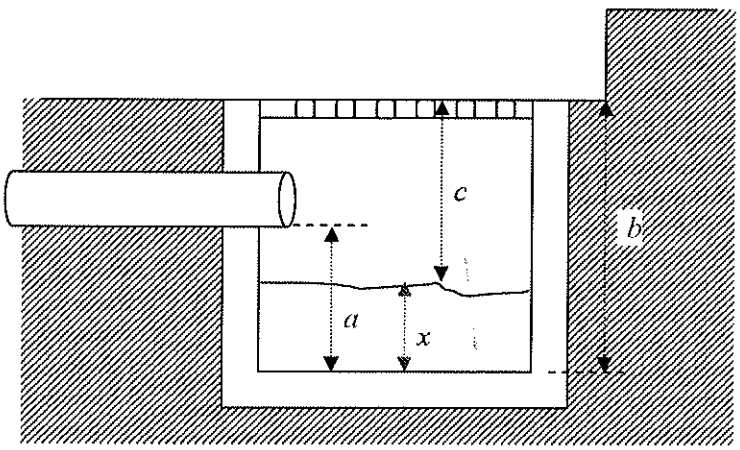



Figure 1. Measurements in the catch basin used to determine the rate of sediment accumulation and estimates of fullness.

2. *Determine the amount of sediment accumulation during the dry and wet months*

   Catch basins are typically cleaned during April/May and September/October. Prior to each cleaning a measurement from the catch basin grate to the top of accumulated sediment ($c$) is recorded (Fig. 1). The depth of accumulated sediment ($x$) is calculated by subtracting the measurement to the top of accumulated sediment ($c$) from the total depth from the grate to the bottom of the sump ($b$). This depth of accumulated sediment is a surrogate for sediment accumulation.

3. *Maintain a set sweeping schedule*

   Sweeping is conducted approximately 20 times per year. There is a regular frequency (approximately twice a month), and additional sweeping occurs after sanding material is applied during storm events. The number of sweeping passes will be recorded for each road segment.

**Data evaluation**

1. *Determine the rate of sediment accumulation*

   The rate of sediment accumulated in the catch basin is calculated from the sediment depth divided by the number of months between cleaning. The mean sediment accumulations rate per month will be estimated per road segment. Road segments will be identified on a GIS map.

2. *Estimate how full the catch basin becomes between cleanings*

   The fullness of the catch basin is calculated as the ratio of sediment depth and the height of the outlet pipe, calculated as a percentage. The mean catch basin fullness and range will be estimated per road segment.

3. *Test hypothesis*

   Compare the mean and range of fullness to the 30% and 60% fullness criteria for each road segment. Compare the rate of sediment accumulation and forecast fullness at the time of the next cleaning.

4. *Determine follow up actions based on results*

   Using the following table as a guide, determine the appropriate changes to catch basin and street sweeping frequency.

| | | *Sept/Oct catch basin cleaning* | | |
|---|---|---|---|---|
| | | *< 30% full* | *30-60% full* | *> 60% full* |
| *Apr/May catch basin cleaning* | *< 30% full* | Reduce catch basin cleaning frequency to once in Sept/Oct | Reduce catch basin cleaning frequency to once in Apr/May.<br><br>Increase sweeping frequency in dry months | Maintain semi-annual catch basin cleaning.<br><br>Increase sweeping frequency in dry months |
| | *30-60% full* | Reduce catch basin cleaning to once in Sept/Oct.<br><br>Increase sweeping frequency in wet months | No change | Maintain semi-annual catch basin cleaning.<br><br>Increase sweeping frequency in dry months |
| | *> 60% full* | Maintain semi-annual catch basin cleaning.<br><br>Increase sweeping frequency during wet months. | Maintain semi-annual catch basin cleaning.<br><br>Increase sweeping frequency during wet months. | Increase catch basin cleaning to 3 times per year.<br><br>Increase sweeping frequency during wet months. |

**Discussion**

The relationship between sweeping and catch basin accumulation varies because of many variables including depth of catch basin, sediment trapping efficiency rates, sediment composition, rain volume, timing of cleaning, and sediment sources. It is therefore not possible to quantify or estimate the effect of sweeping on catch basin cleaning frequency by looking at the total street sweeping debris. Previous data of total catch basin sediment and sweepings has a wide range. Some of this variability can also be attributed to the difficulty in cleaning or sweeping all or every portion of a road segment for practical reasons, particularly parked cars.

The height of the catch basin outlet pipe is key determinant of catch basin capacity. About 1/3 of the County's catch basins have the outlet pipe set at the bottom of the catch basin, hence these have no apparent capacity. However, outlet pipes set at the bottom are more prone to clogging with debris and trash, and ironically, clogged pipes create a sort of filter that causes these catch basins to rapidly fill up with sediment. These catch basins (and potentially other very shallow catch basins) will be reviewed as a separate category from other more typical catch basins which average 16" of sump depth (to the outlet pipe). Follow up inspections and increased cleaning or potential retrofits may occur depending on the condition of the catch basin.

Catch basin sediment accumulation will naturally vary, and we will consider the range as well as the mean in the evaluation. New grouping and subgrouping of catch basins may result from the evaluation. Some flexiblity will be used in applying the guidelines in the table to accomodate efficiencies in conducting the maintenance. Catch basins with chronic or unusual problems will be handled in a separate category, like those with outlet pipes at the bottom, very large/deep catch basins, or catch basins located at the bottom of slopes, and inspection and cleaning strategies will be adjusted as needed.

The impact of lateral clogging is another variable that is difficult to assess. Lateral cleaning will occur once a year concurrently with catch basin cleaning. Broken laterals of other maintenance needs will be reported and repaired as they arise. Determining whether to include or exclude catch basins with maintenance needs will be done on a case by case basis.

A GIS mapping system will allow us to track catch basin cleaning and sweeping in a new way. The GIS mapping will help with developing work orders that target specific catch basins, as well as sets of catch basins on a road segments. A fine tuning of the maintenance schedule is possible with this data, so that follow up work can be assigned in an strategic manner. In the forthcoming adaptive management approach, we intend to use watersheds and subwatersheds to assign a priority scheme for maintenance using the health of the aquatic resources and the risks associated with stormwater on those resources as criteria. Work orders may be tailored to consider all of these factors to most effectively conduct this work.

**Conclusion**

Developing a strategy to create more efficient work plans and pollutant removal through street sweeping and catch basin cleaning will require program development, mobile computer resources, and good observations from staff. Given the variability in the stormwater system, there will be challenges to summarize and evaluate the sediment accumulation data. This paper outlines the strategy to collect data and established the criteria that will be used to evaluate the program. As more information is collected, additional questions are certain to arise and further adaptive management will be needed to develop the program.

# Exhibit 5
# Catch basin cleaning and street sweeping programs summary data handout

Caroline O 5/14/13

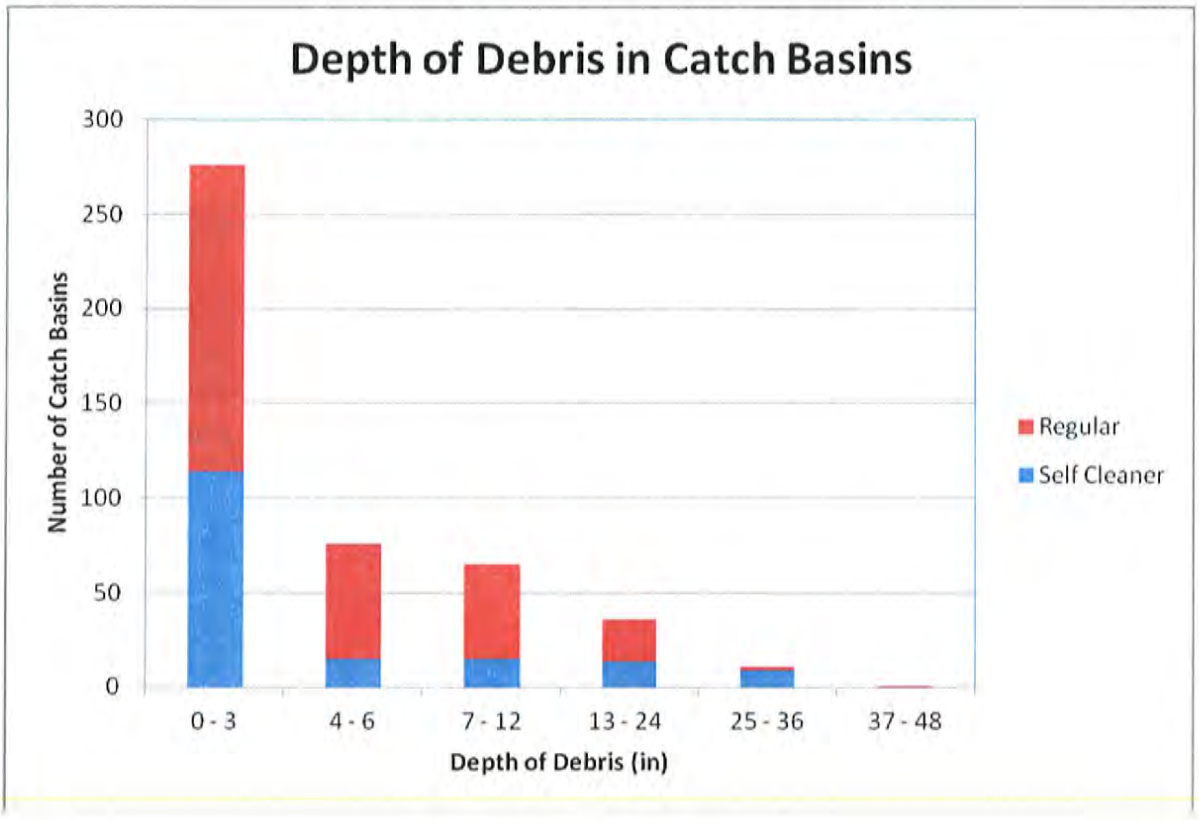
## Catch Basin Cleaning – Preliminary Data Analysis

(4/15/13 RI)

Depth of Debris

| *Debris (in)* | *Self Cleaner* | *Regular* | *Total* |
|---|---|---|---|
| **0 - 3** | 114 | **162** | ***276*** |
| **4 - 6** | **15** | 61 | *76* |
| **7 - 12** | **15** | 50 | *65* |
| **13 - 24** | **14** | 22 | *36* |
| **25 - 36** | **9** | 2 | *11* |
| **37 - 48** | **0** | 1 | *1* |
| *Total* | *167* | *298* | *465* |

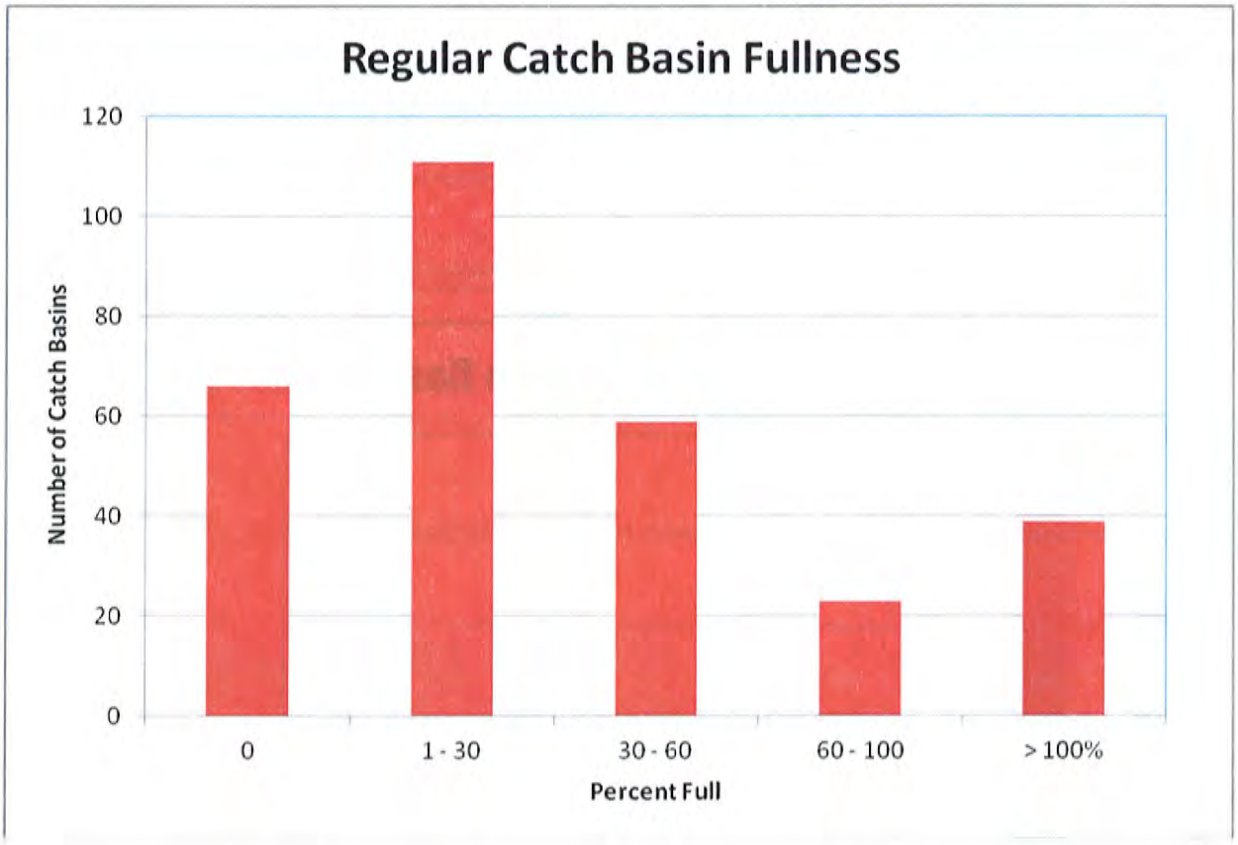
| *Debris (in)* | *Self Cleaner* | *Regular* | *Total* |
|---|---|---|---|
| 0 - 3 | 68% | **54%** | **59%** |
| 4 - 6 | **9%** | 20% | 16% |
| 7 - 12 | **9%** | 17% | 14% |
| 13 - 24 | **8%** | 7% | 8% |
| 25 - 36 | **5%** | 1% | 2% |
| 37 - 48 | **0%** | 0% | 0% |
| *Total* | *100%* | *100%* | *100%* |

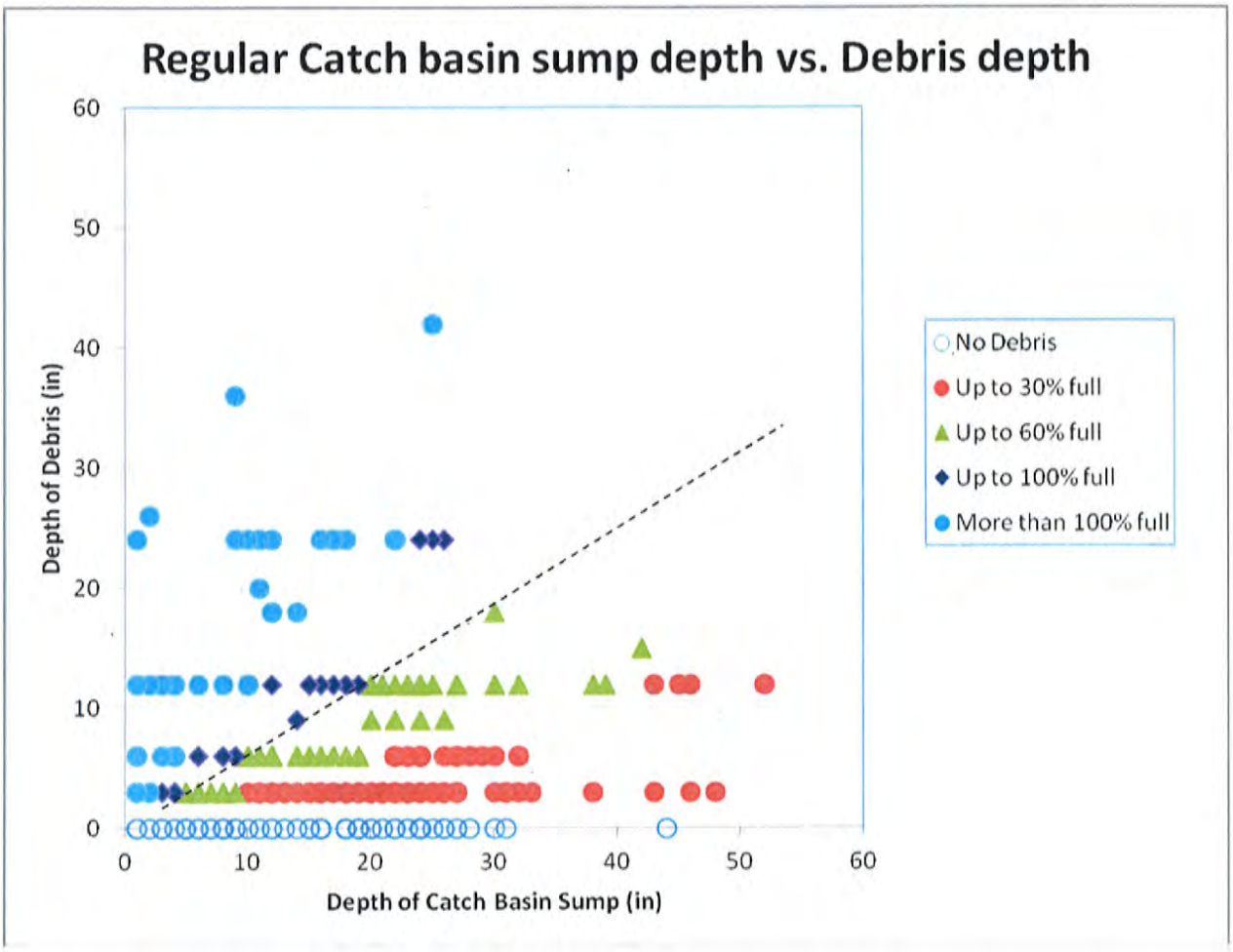


Catch Basin Fullness

| Bin | Self Cleaners | Regular | Total |
|---|---|---|---|
| **0** | 75 | 66 | *141* |
| **1 - 30** | 0 | 111 | *111* |
| **30 - 60** | 0 | 59 | *59* |
| **60 - 100** | 0 | 23 | *23* |
| **> 100%** | 92 | 39 | *131* |
| *Total* | *167* | *298* | *465* |

| Bin | Self Cleaner | **Regular** |
|---|---|---|
| 0 | 45% | 22% |
| 1 - 30 | 0 | 37% |
| 30 - 60 | 0 | 20% |
| 60 - 100 | 0 | **8%** |
| > 100% | 55% | **13%** |
| *Total* | *100%* | *100%* |

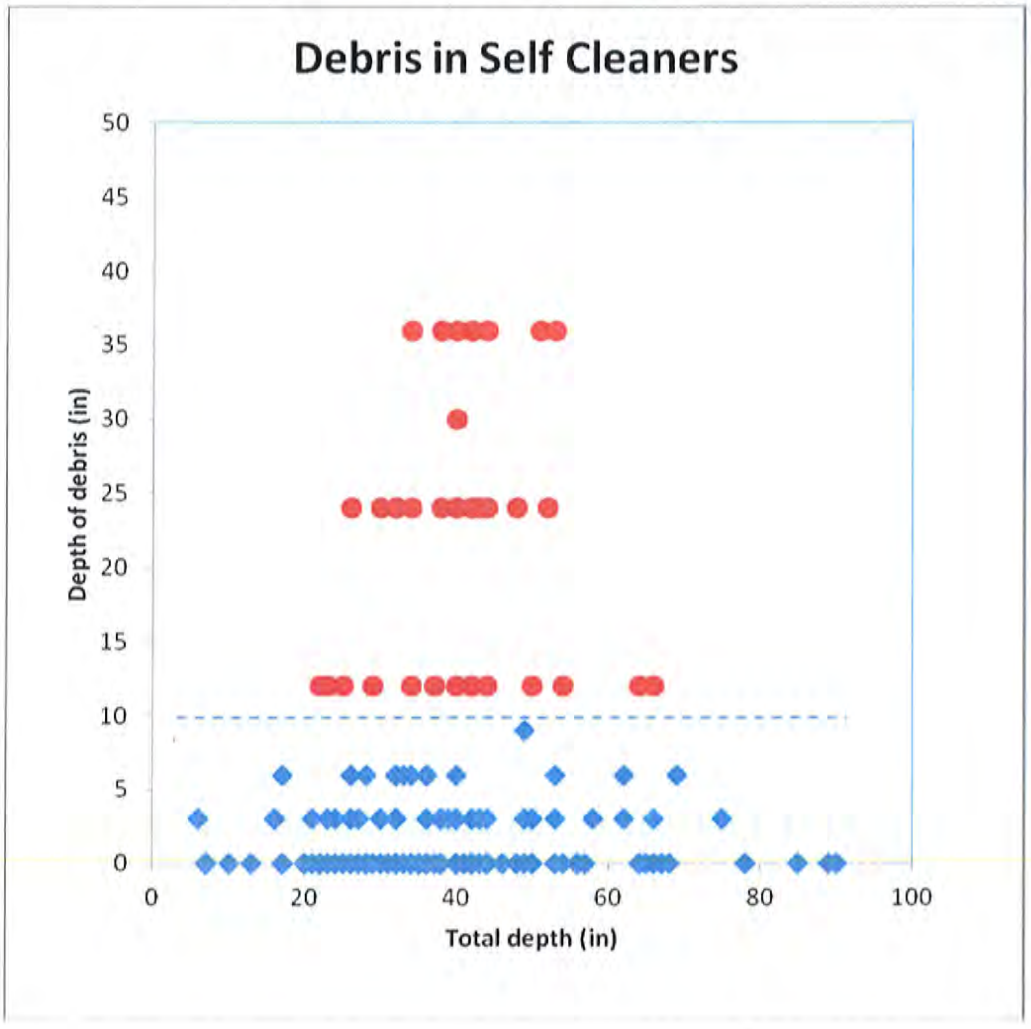



Regular Catch basin sump depth vs. Debris depth
Depth of Debris (in)
Depth of Catch Basin Sump (in)
0
10
20
30
40
50
60
No Debris
Up to 30% full
Up to 60% full
Up to 100% full
More than 100% full

How full are"Self Cleaners"?

Self-cleaners were defined as catch basins having no sump (zero depth). Functionally, catch basins with sumps less than 6" may act like self cleaners since their trapping efficiency is very low.

| *Bin* | *Frequency* | *%* |
|---|---|---|
| 0 - 3 | 114 | 68% |
| 4 - 6 | 15 | 9% |
| 7 - 12 | 15 | **9%** |
| 13 - 24 | 14 | **8%** |
| 25 - 36 | 9 | **5%** |
| More | 0 | 0% |
| *Total* | 167 | 100% |



Preliminary summary of results

1. Approximately 60% of all the catch basins had less than 3" of debris.
2. Approximately 20% of "regular" catch basins exceeded 60% fullness.
3. Approximately 70% of "self cleaners" accumulated less than 3" of debris.
4. Approximately 22% of "self cleaners" accumulated more than 6" of debris.

Management implications

1. We might be cleaning many catch basins too often.
2. Some catch basins need to be cleaned more often.

Management questions

1. Why do some catch basins remain empty of debris?
2. Where do empty catch basins occur?
3. Why do some catch basins get clogged?
4. Where do clogged catch basins occur?

# Exhibit 6
# Sellwood Bridge CIP Project "ESC Action Item Log"

**SELWOOD BRIDGE ESC ACTION ITEM LOG**

| Item No. | Start Date | Item Description | Ball in Court | Comments | Status / Completion Date |
|---|---|---|---|---|---|
| 32 | November 19, 2012 | Replace or repair compost filter sock on east edge of river by Spokane Street and Bent 17 | MCDE | Will repair prior to work continuing in this area | Ongoing |
| 45 | December 10, 2012 | Clean concrete mess that was disposed of outside designated wash outs | Condon Johnson | | December 14, 2012 |
| 46 | December 10, 2012 | Replace CB Sock at RR Trestle, closest to River | MCDE | | December 14, 2012 |
| 47 | December 10, 2012 | Mud was tracked onto OR43 and Spokane Street (this item will replace Item 21) | SSJV | WTS cleaned the OR43 and Spokane | December 14, 2012 |
| 48 | December 10, 2012 | Dispose of muck along rivers edge on west side (this item will replace Item 20) | SSJV | Item 51 will replace this item | December 17, 2012 |
| 49 | December 17, 2012 | Improve drainage path to CB on west side @ trestle | SSJV | | NEW |
| 50 | December 17, 2012 | Clean Condon Johnson work area after completion of Seg B Shear Pile | Star | | NEW |
| 51 | December 17, 2012 | Remove concrete spoils off OR 43 Island just south of the project | Condon Johnson | | NEW |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

# Exhibit 7
# ODOT Standard Specifications for Construction sections 00280 and 00290

## Section 00280 - Erosion and Sediment Control

### Description

**00280.00 Scope** - This work consists of implementing structural and non-structural Best Management Practices (BMP) for the purpose of controlling soil erosion by wind or water and keeping eroded sediments and other construction-generated pollutants from moving off project sites.

Requirements described in these Specifications and shown on the plans are part of the project Erosion and Sediment Control Plan (ESCP) and are the minimum for all project construction sites and conditions. These Specifications cover all project activities performed under the authority and jurisdiction of the Agency, including material sources, disposal sites, and off-site mitigation areas unless specific project activities are excluded elsewhere in these Specifications or in other Agency approved documents controlling the work.

**00280.01 National Pollutant Discharge Elimination System** - Comply with Federal, State, and local laws, rules and regulations, and the National Pollutant Discharge Elimination System (NPDES) 1200 Permit or Permits applicable to the project. A copy of the Agency's General Construction 1200 CA Permit, if applicable to the project, is available from the Agency. A local government 1200 CA Permit may also apply and some local agency requirements may be more stringent than these Specifications.

**00280.02 Erosion and Sediment Control Plan on Agency Controlled Lands** - For work on Agency-controlled lands, submit signed copies of the following for review and approval ten days before the preconstruction conference:

- A Contractor-developed, "construction" ESCP that incorporates the Agency's ESCP and all proposed modifications to it that fully complies with NPDES 1200 Permits applicable to the project.
- A narrative as described in the NPDES 1200 Permit and the Agency Erosion Control Manual.
- Implementation schedules for the ESCP based on each phase of the contractor's construction schedule.

An Agency-developed ESCP is typically furnished as part of a conventional contract plan set, which helps fulfill part of the ESCP requirement of the Permit. This initial ESCP, when adopted by the Contractor, may be used as the basis of the construction ESCP. Additional or revised erosion and sediment control features, not shown on the initial ESCP, may be required depending on the Contractor's methods of operation and schedule.

For each phase of the scheduled work, indicate on the ESCP all the BMP proposed and installed for erosion and sediment control to minimize clearing, stabilize exposed soil, divert or temporarily store flows, limit runoff from exposed areas, and filter transported sediment. Include all temporary slopes, constructed for staging or other reasons, which may not have been identified in the original contract plans. For assistance in preparing or modifying the ESCP, refer to the current Agency Erosion Control Manual.

Some ESCP required elements typically required by NPDES 1200 Permits:

**(a) Narrative Site Description:**

- Nature of the construction activity planned for the site
- Estimates of total site area and the areas of the site expected to be disturbed
- Soil types found on the site and their erosion potential
- The types of fill materials to be used
- Timetable for sequence of major construction events

**(b) Site Map:**

- All areas of development
- Drainage patterns
- Areas of soil disturbance, including pre-development and post-development elevation contours
- Areas used for storage of soils or wastes
- Areas where vegetative practices are to be implemented
- Location of all erosion and sediment control BMP or structures
- Location of all impervious structures and surfaces after project is completed
- Springs, wetlands, and other surface waters located on-site
- Boundaries of the 100 year floodplain, if determined
- Ordinary High Water line, if determined
- Location of storm drainage outfalls to receiving waters, if applicable
- Details of sediment and erosion controls
- Details of detention ponds, storm drain piping, inflow and outflow details

**(c) Required BMP and Procedures for Erosion Prevention, Runoff Control, and Sediment Control:**

- Construction entrances and parking areas
- Unpaved site roads such as haul roads
- Hauling saturated soils from the site
- Water washed from concrete trucks
- Correct installation of erosion and sediment control BMP (contract documents and agency references such as these Specifications may be cited as installation standards if applicable)
- Prompt maintenance and repair of BMP
- Clearing and grading practices to minimize area of exposed soil throughout the life of the project
- Schedule of phased clearing operations to limit soils to what can be stabilized
- Vegetative practices including preservation of existing vegetation, seeding, mulching, and buffer strips
- Preventing erosion of exposed areas
- Diverting flows from exposed slopes
- Limiting runoff from exposed areas
- Limiting sediment transport within work sites and keeping it from moving off of project areas
- Perimeter controls for all clearing and grubbing, both planned and installed
- Additional controls for wet season work and temporary work suspensions
- Sensitive areas such as wetlands
- Off site material source and waste areas
- Dust
- Emergency materials stockpiled on-site
- Storing flows, and filtering sediment
- Stockpiles

Ensure that the Contractor's construction ESCP and implementation schedules are prepared by an individual who meets qualifications of 00280.30. Furnish a signed copy of the ESCP with individual's name, title, state certifications, and employing firm if different than Contractor's firm.

Do not begin any site activities that have potential to cause erosion or sediment movement until the ESCP and implementation schedules are approved by the Engineer.

Keep a copy of the approved ESCP with updated changes on-site during all construction activities. During inactive periods longer than 7 calendar days, keep the ESCP on-site or provide a copy to the Engineer to retain.

Continually update the ESCP and schedules as needed for unexpected storm or other events to ensure that sediment-laden water does not leave the construction site. If there are approved changes, add them to the ESCP no later than 24 hours after implementation.

**00280.03 Non-Agency Controlled Lands ESCP** - For work on non-Agency controlled lands, in addition to the requirements of 00280.02, submit the following for review ten days before the preconstruction conference:

- A Contractor-developed ESCP for each unique site covered under project NPDES 1200 Permits.
- A description of how the ESCP will be implemented and monitored on these sites.
- A complete list of other applicable permits controlling work on these lands, whether the Agency is one of the permittees or not, and copies of the applicable permits.
- Proof that permits are not required from all pertinent federal, State, county, city, and local agencies
- Signed letter from the property owner that allows the Contractor access to the property. Include a statement in the letter that holds the Agency harmless for all consequences related to the Contractor's use of the property.
- Signed agreement with the property owner detailing the Contractor's operation, use of the property, and stating that Contractor will abide by permits, if any.

If the Contractor's operations require work on non-Agency controlled lands not presented at the preconstruction conference, or if changes to the Contractor's submitted ESCP are necessary, submit a new or revised ESCP to the Agency for approval before beginning work.

**00280.04 Erosion and Sediment Control Manager** - Designate and provide a representative as the Erosion and Sediment Control Manager (ESCM) who meets the qualifications of 00280.30.

## Materials

**00280.14 Erosion Prevention Materials:**

**(a) Plastic Sheeting** - Furnish plastic sheeting slope protection, anchoring system, and toe protection meeting the following requirements:

- **Plastic Sheeting** - Minimum 6 mil thick polyethylene plastic sheeting.
- **Anchoring System** - Minimum 65 pounds, non-puncture type anchor weights with cords or ropes of adequate strength to support the weights on the slope or new or used chain link fence conforming to 03010.30.
- **Stakes** - Commercial grade metal posts with a weight of at least 1.35 pounds per foot.
- **Rock** - Class 50 riprap conforming to Section 00390.

**(b) Chemical Soil Binder** - Furnish a liquid stabilizing emulsion meeting the requirements of 00280.14(c).

**(c) Chemical Dust Control -** Furnish non-toxic materials with no adverse effect on soil structure or establishment and growth of vegetation. Furnish one of the following materials and apply as directed by the manufacturer's instructions:

**(1) Liquid Stabilizer Emulsion** - A tackifier of liquid and polyvinyl acetate polymers with emulsion resins containing not less than 55% total solids by weight. Do not use tackifiers containing polyacrylates or polyvinyl acrylics.

**(2) Dry Powder Tackifier** - A tackifier consisting of one or more active hydrocolloids from natural plant sources which hydrates in water and blends with other slurry materials, and upon application and drying tacks the slurry particles to the soil surface, and exhibits no growth or germination inhibiting factors. Provide stabilizing emulsion in a dry powder form that may be re-emulsifiable and consists of a processed organic adhesive derivative of one of the following:

- Gumbinder derived from guar (Cyamopsis tetragonoloba)
- Gumbinder derived from plantain (Plantago insularis)

**(d) Temporary Mulching** - Furnish temporary and permanent seeding, fertilizing, and mulching meeting the requirements of Section 01030.

**(e) Slope and Channel Liner Matting** - Matting is organized according to categories from the Texas DOT/TTI Hydraulics and Erosion Control Laboratory. Furnish matting from the QPL that meets the following performance criteria categories:

- **Type A** - Slope protection mat for clay soil slopes 1V:3H or flatter.
- **Type B** - Slope protection mat for sandy soil slopes 1V:3H or flatter.
- **Type C** - Slope protection mat for clay soil slopes steeper than 1V:3H.
- **Type D** - Slope protection mat for sandy soil slopes steeper than 1V:3H.
- **Type E** - Flexible channel liner for shear stress from 0 to 2 pounds per square foot.
- **Type F** - Flexible channel liner for shear stress from 0 to 4 pounds per square foot.
- **Type G** - Flexible channel liner for shear stress from 0 to 6 pounds per square foot.
- **Type H** - Flexible channel liner for shear stress from 0 to 8 pounds per square foot.

Furnish check slot material and fasteners for matting meeting the following requirements:

**(1) Check Slot:**

- **Channel Application** - Compacted Class 50 riprap meeting the requirements of Section 00390.
- **Slope Application** - Compacted suitable native embankment material.

**(2) Fasteners** - U-shaped wire staples or heavy duty pins as follows:

- **Staples** - 14 gauge steel wire staples. 1 inch "U" width with a length of 6 inches minimum for cohesive soils and 8 inches minimum for non-cohesive soils.

- **Pins** - 3/16 inch diameter steel pin with a 2 inch diameter steel washer secured at the head of the pin with a length of 18 inches minimum for cohesive soils and 24 inches minimum for non-cohesive soils.

**00280.15 Runoff Control Materials:**

**(a) Check Dams** - Furnish check dam material meeting the following requirements:

- **Type 1: Aggregate** - Aggregate with maximum size between 6 inches and 3 inches meeting the requirements of 00330.16.

- **Type 2: Straw Bales** - Standard rectangular straw bales meeting the requirements of 01030.15.

- **Type 3: Biofilter Bags** - Minimum size 18 inch x 6 inch x 30 inch plastic mesh bags with 1/2 inch openings filled with approximately 45 pounds of clean, non-toxic 100% recycled wood product waste containing no fine materials or sediments, or as shown on the standard drawings for this device.

- **Type 4: Sand Bags** - Durable, weather-resistant bags woven tightly enough to prevent leakage of filler material. Fill bags with at least 75 pounds of firmly-packed fine PCC 3/8" - 0 aggregate, or round 3/8" - 3/16" pea gravel.

- **Type 5: Prefabricated System** - Prefabricated check dam system conforming to the manufacturer's recommendations and on the QPL.

- **Check Dam Stakes** - Stakes meeting the requirements of 00280.14(a).

**(b) Diversion Dikes and Swales** - Furnish diversion dike and swale materials meeting the following requirements:

- **Aggregate** - Aggregate with maximum size between 4 inches and 1 inch meeting the requirements of 00330.16.

- **Seeding, Fertilizing and Mulching** - Permanent or temporary seeding, fertilizing and mulching meeting the requirements of Section 01030.

**(c) Temporary Drainage Curbs** - Furnish temporary drainage curb material meeting the following requirements:

- **Type 1 Curb** - Concrete drainage curb meeting the requirements of 00480.10.

- **Type 2 Curb** - Asphalt concrete drainage curb meeting the requirements of 00480.10.

- **Type 3 Curb** - Sand bags meeting the requirements of 00280.15(a).

**(d) Temporary Slope Drains** - Furnish either plastic pipe meeting the requirements of Section 02410 or metal pipe meeting the requirements of Section 02420. If the runoff contributing area is not established, use 12 inch diameter.

**(e) Flow Spreader** - Furnish aggregate for flow spreaders with a maximum size between 6 inches and 3 inches meeting the requirements of 00330.16.

**00280.16 Sediment Control Materials:**

**(a) Construction Entrances** - Furnish materials meeting the following requirements:

- **Aggregate** - Aggregate with a maximum size between 6 inches and 3 inches meeting the requirements of 00330.16.
- **Geotextile** - Subgrade geotextile meeting the requirements of Section 02320. Provide "Level B" documentation according to 02320.10(c).

**(b) Tire Wash Facility** - Furnish tire wash facility materials meeting the following requirements:

- **Aggregate** - 1 1/2" - 0, 1" - 0, or 3/4" - 0 aggregate base material meeting the requirements of Section 00641.
- **Reinforcing Steel** - Reinforcing steel meeting the requirements of 02510.10.
- **Geotextile** - Subgrade geotextile meeting the requirements of Section 02320. Provide "Level B" documentation according to 02320.10(c).
- **Concrete** - Commercial grade concrete meeting the requirements of Section 00440.

**(c) Sediment Fence** - Furnish sediment fence materials meeting the following requirements:

- **Geotextile** - Geotextile meeting requirements of Section 02320. Provide "Level B" documentation according to 02320.10(c).
- **Posts** - Furnish the following posts for the types of fence shown:
  - **Sediment Fence, Supported** - Commercial grade metal posts with a weight of at least 1.35 pounds per foot.
  - **Sediment Fence, Unsupported** - Minimum 1 1/2 inch x 1 1/2 inch x 48 inch untreated wood posts (wood stain is acceptable).
- **Wire Mesh -** For supported sediment fence, furnish galvanized wire mesh with 2 inch x 2 inch openings, horizontally and vertically self-supporting prior to fastening to posts, a minimum tensile strength of 70 ksi, and meeting the requirements of ASTM A 82.

**(d) Inlet Protection** - Furnish inlet protection materials meeting the following requirements:

- **Wire Mesh** - Wire mesh materials as follows:
  - **Type 1 Inlet Protection** - Wire mesh meeting the requirements of 00280.16(c).
  - **Type 2 Inlet Protection** - 19 gauge steel-wire mesh with 3/8 inch x 3/8 inch openings.
- **Geotextile** - Type 1 sediment fence geotextile meeting the requirements of Section 02320. Provide "Level B" documentation according to 02320.10(c).
- **Aggregate** - Aggregate with maximum size between 4 inches and 1 inch meeting the requirements of 00330.16.

- **Stakes** - Stakes meeting the following requirements:
  - **Type 1 Inlet Protection** - Commercial grade metal posts with a weight of at least 1.35 pounds per foot.
  - **Type 4 Inlet Protection** - Minimum 1 inch x 2 inch x 18 inch wooden posts.
- **Biofilter Bags** - Biofilter bags meeting the requirements of 00280.15(a).
- **Prefabricated Filter Inserts** - Prefabricated filter inserts manufactured specifically for collecting sediment in drainage inlets and listed on the QPL. Include handles and fasteners sufficient to keep the insert from falling into the inlet during maintenance and removal of the insert from the inlet.
- **Concrete Masonry Units** - Nominal 8 inch x 8 inch x 16 inch, 29 pound concrete masonry units (CMU).
- **Sod** - Grass sod meeting the requirements of 01040.19(h).
- **Reinforcing Steel** - No. 4 rebar commercial grade reinforcing steel.

**(e) Sediment Barriers** - Furnish sediment barriers and sediment barrier stakes meeting the following requirements:

- **Type 1: Straw Bales** - Standard 45 to 65 pound rectangular straw bales that are wire-bound or string-tied meeting the requirements of 01030.15(b).
- **Type 2: Biofilter Bags** - Biofilter bags meeting the requirements of 00280.15(a).
- **Type 3: Fiber Rolls (Wattles)** - Fiber rolls made of straw meeting the requirements of 01030.15(b), except use only rice or coconut straw material. Wrap the straw to a minimum density of 2.75 pounds per cubic foot in tubular plastic netting meeting the following requirements:
  - 8 inch to 10 inch diameter size
  - Minimum strand thickness of 0.003 inch
  - Knot thickness of 1/16 inch
  - Weight of 0.35 ounces per foot ±10%
  - Made from 85% high density polyethylene, 14% ethyl vinyl acetate, and 1% color for UV inhibition
- **Type 4: Sand Bags** - Sand bags meeting the requirements of 00280.15(a).
- **Type 5: Brush Barrier** - Maximum 6 inch diameter woody debris brush or topsoil strippings for brush barriers. Provide type 1 sediment fence geotextile meeting the requirements of Section 02320. Provide "Level B" documentation according to 02320.10(c).
- **Type 6: Filter Berm** - Aggregate with maximum size between 4 inches and 1 inch meeting the requirements of 00330.16. Provide subgrade geotextile meeting the requirements of Section 02320. Provide "Level B" geotextile documentation according to 02320.10(c).
- **Type 7: Prefabricated Barrier System** - Prefabricated barriers manufactured specifically for temporarily obstructing the flow of sediment-laden water and listed on the QPL.

- **Stakes** - Sediment barrier stakes as follows:
  - **Biofilter Bags** - Use minimum 1 inch x 2 inch x 18 inch wood stakes.
  - **Brush Barrier** - Use minimum 1 inch x 2 inch x 18 inch wood stakes.
  - **Straw Bales** - Use minimum 1 1/2 inch x 1 1/2 inch x 36 inch wood stakes.
  - **Fiber Rolls** - Use minimum 1 inch x 1 inch x 24 inch wood stakes.

**(f) Sediment Mat** - Furnish sediment mat from the QPL.

**(g) Temporary Scour Basin** - Furnish class 100 riprap for temporary scour basins meeting the requirements of Section 00390.

**(h) Temporary Sediment Trap** - Furnish sediment trap materials meeting the following requirements:

- **Geotextile** - Type 2 drainage geotextile meeting the requirements of Section 02320. Provide "Level B" documentation according to 02320.10(c).
- **Aggregate Base** - 1 1/2" - 0, 1" - 0, or 3/4" - 0 aggregate for aggregate base meeting the requirements of Section 00641.
- **Aggregate** - Aggregate with maximum size between 6 inches and 3 inches meeting the requirements of 00330.16.

**Labor**

**00280.30 Erosion and Sediment Control Manager** - Designate and provide an ESCM with the following minimum qualifications:

- Experience in all major disciplines of highway construction.
- Knowledgeable in principles of and practice of erosion and sediment controls.
- Skilled in assessing site conditions and effectiveness of erosion control BMP used.
- Successful completion of erosion control formal training sponsored by the Agency or acceptable to the Engineer.
- Responsible participation in construction of at least one Agency project with erosion control.
- Authority to immediately mobilize necessary personnel to correct and modify erosion control BMP as required.

Duties typically required of ESCM include:

- Manage and ensure proper implementation of the ESCP.
- Accompany the Engineer during field review of the ESCP prior to construction activities.
- Monitor rainfall on and in the vicinity of the Project site.
- Monitor water quality in receiving streams in the vicinity of the Project site.
- Inspect erosion and sediment control on active construction sites weekly.
- Inspect erosion and sediment control on inactive sites every two weeks.
- Inspect erosion control BMP on all active and inactive sites at least daily during rainy periods when 5/8 inch or more of rain has fallen within a 24 hour period.

- Mobilize crews to make immediate repairs to BMP or install additional BMP during working and non-working hours.
- Record actions taken to clean up significant amounts of sediment.
- Report potential permit violations to the Agency in a timely manner.
- Regularly update the approved Erosion Control Monitoring form.
- Update the ESCP monthly and within 24 hours after changes or major BMP modifications are implemented.
- Prepare a contingency plan in preparation for emergencies and the rainy season.
- Accompany the Engineer on inspections and, if required, on inspections by representatives of regulating agencies.

Provide the ESCM name, description of experience and training, qualifying certifications, and contact phone number ten days before the preconstruction conference. If changes in the appointment of the ESCM occur during the term of the Contract, provide written notice to the Engineer within five calendar days.

## Construction

**00280.40 Installation** - Install erosion and sediment control BMP as shown and according to the most current edition of the ODOT Erosion Control Manual. Install these BMP before performing clearing, grading, or other land-altering activities. Ensure that sediment laden water does not leave the Project boundaries, enter drainage systems or waterways, or violate applicable water standards.

Included in this work are both non-structural BMP, such as limiting clearing of vegetation, and structural BMP such as various kinds of physical devices or materials like sediment fences. BMP may be temporary or they may be permanent when required to continue functioning after the Contract ends. Coordinate temporary erosion control BMP with permanent BMP and all related project work.

Provide continuous erosion prevention and sediment control throughout the period the Contractor is responsibilities for project sites under the Contract as determined by the Engineer. Take all reasonable steps to minimize or prevent any erosion and transport of sediment. Install and maintain all erosion and sediment control BMP to function as required. If planned or installed BMP are not effective, modify or change them so they are effective. Effective functioning is defined as preventing erosion, controlling runoff, or controlling sediment in each location where a measure is needed so all erosion-related impacts of site construction are fully mitigated as required.

**00280.41 Work Restrictions** - The following work restrictions apply:

**(a) Disturbance Limits** - Flag all construction site-clearing limits with high visibility flagging and do not disturb areas outside the flagging limits. Maintain the flagging during Project construction.

**(b) Perimeter Controls** - Perimeter controls include sediment fences, ditches, filter berms in flatter areas, and other methods for channeling flows. Install all appropriate perimeter controls before beginning any ground disturbing activities, especially at critical locations such as stream banks, the toe of fill or cut slopes, and sites near the two-year flood elevation.

**(c) Wet Season Work and Temporary Work Suspension** - Wet season work is defined as work between October 1 and May 30. Update the ESCP and schedule for work proposed during the wet season to ensure that all appropriate controls, including work suspension controls, are implemented and maintained. Submit the updated ESCP and schedule to the Agency and receive approval before beginning any work during the wet season. The Agency may not approve work on critical sites with high erosion potential if controls are not properly installed or have a likelihood of failure.

During the wet season, limit excavation and bare ground activities to only that required for immediate operations. Stabilize soil stockpiles at the end of each workday by diverting flows, placing covers, or installing sediment barriers at the stockpiles.

**(d) Disturbance Restrictions** - If soil erosion and sediment resulting from construction activities is not effectively controlled, the Agency will limit the amount of disturbed areas to that which can be effectively controlled. Implement erosion and sediment control BMP at the earliest practicable time. Install all erosion and sediment control devices according to the approved ESCP and schedule. If the Contractor fails to control erosion, the Agency will stop all construction work according to 00180.70.

**00280.42 Stabilization** - Protect exposed soils from erosion by water, wind, or vehicles when required by permits or directed by the Engineer. At a minimum, stabilize soil areas as follows:

**(a) Soil Exposure Limitations:**

- **Statewide (Entire Year)** - Within seven days of exposure, stabilize all areas within 100 feet of waterways, wetlands, or other sensitive areas using methods that do not rely solely upon germination to control erosion.
- **West of the Cascades (Entire Year)** - Stabilize all other areas within 14 days of exposure.
- **East of the Cascades (October 1 through April 30)** - Stabilize all other areas within 14 days of exposure.
- **East of the Cascades (May 1 through September 30)** - Stabilize construction areas in stages based on site conditions, weather, and as determined by the Engineer.

**(b) Temporary Stabilization** - Temporarily stabilize exposed soils:

- Every 14 days or more frequently of needed or directed.
- Upon approval, active work areas scheduled for re-disturbance may be left unstabilized for 14 day periods if erosion by wind, water, or vehicles is not occurring or imminent.
- A minimum of one day before expected rain events.
- During wet periods and when not actively raining, at the end of each day.
- As an emergency measure when rain is falling on unprotected areas.
- When wind or vehicle traffic is visibly causing more than minor dust.
- Soil surfaces at finish grade when working outside the permanent seeding dates.

Temporary stabilization includes, but is not limited to, chemical soil binders, mulching and tacking, erosion control matting, plastic sheeting, and temporary seeding or other BMP required to achieve the necessary stabilization.

Document all implemented BMP on the ESCP. Ensure that permanent slope stabilization is achieved before removing temporary BMP.

**(c) Permanent Stabilization** - Permanently stabilize exposed soil surfaces at finished grade. Permanent stabilization methods include, but are not limited to, seeding, mulching, structural surface coverings such as riprap, and vegetative stabilization. Permanent stabilization includes stabilization of temporary structures such as detours and staged earthwork. Immediately perform permanent stabilization at each completed excavation and embankment area except for areas that are scheduled to be redisturbed.

If seeded areas are not sufficiently stabilized by an established stand of vegetation according to 01030.60, or if the soil surface is not sufficiently protected with temporary stabilization BMP by November 1 of each year, do the following:

- Use BMP necessary to redirect water flows away from disturbed areas.
- Re-grade disturbed areas to finish grade.
- Apply permanent seeding at the original specified rate.
- Apply temporary mulching or matting.

If areas for temporary stabilization are too steep or lack access for effective straw mulch application, apply, upon approval, another effective measure such as chemical soil binder.

Incorporate permanent erosion control features into the Project at the earliest practicable time. Use temporary erosion control features for the following situations:

- To correct conditions that occur during construction activities that were not foreseen during the design stage of the Project.
- That are needed prior to installing permanent erosion control features.
- To temporarily control erosion that develops during normal construction activities.

Where potential for erosion exists and if construction permits, construct permanent erosion control features immediately after clearing and grubbing and grading operations are complete. If permanent erosion control BMP are not practicable to construct, furnish and install temporary erosion control BMP.

**00280.43 Area Preparation** - Prepare areas according to 01040.48(d) and track all fill slopes at finished grade steeper than 1V:3H and flatter than 1V:1.5H so that track impressions run parallel to slope contours. Maintain at least 1 3/8 inch tall track grousers.

**00280.44 Erosion Prevention BMP** - Install erosion prevention BMP as shown and according to the following:

**(a) Plastic Sheeting** - Place plastic sheeting on disturbed, temporary slopes or stockpiles where immediate protection is required and mulching or other methods of soil stabilization are not feasible. Temporary slopes include vertical excavations for retaining walls and other temporary soil excavations and embankments related to structural work.

Cover exposed soil with plastic sheeting and secure tightly using an anchoring system of sand bags, chain link fence, or other approved methods. Do not allow the anchoring system to puncture the plastic sheeting. Trench plastic sheeting at the top of slope and secure adequately to keep in place during any conditions that can be reasonably expected in the area. Direct runoff away from areas above plastic sheeting to prevent undermining. Control runoff from plastic sheeting so water discharges into protected drainage.

**(b) Chemical Soil Binder** - Hydraulically apply a liquid stabilization emulsion at the following rates unless the manufacturer recommends a greater rate of application:

- **Long Term Control of Exposed Soil Surfaces** - Apply 35 gallons per acre of emulsion. Dilute with water at the rate of one part emulsion to 20 parts water.

- **Steep Slopes with Raveling Small Rock** - Apply 45 gallons per acre of emulsion. Dilute with water at the rate of one part emulsion to 10 parts water.

**(c) Chemical Dust Control** - Apply appropriate dust control for wind or equipment-caused erosion according to the following:

- **Water** - Apply water according to Section 00340.

- **Liquid Stabilizer Emulsions** - Dilute the emulsion with water at a rate of one part emulsion to 30 parts water. Apply the diluted mixture at the rate of 865 gallons per acre unless the manufacturer recommends a greater rate of application.

- **Dry Powder Tackifier** - Apply at a rate of 140 pounds per acre unless the manufacturer recommends a greater rate of application.

Watering for dust control may also be covered under Section 00340.

**(d) Temporary Mulching** - Evenly apply dry mulch and tackifier material to form a cohesive surface cover that is resistant to displacement by wind and water. In areas not accessible to heavy equipment, mulch by hand or by other approved methods. Areas not prepared according to 01040.48(d) will require greater rates of application at no additional cost to the Agency.

**(1) Dry Mulch** - Apply straw mulch on slopes 1V:1.5H or flatter. Spread straw mulch by hand or blower. Place approximately 2 inch deep, in loose condition, at a rate between 2 to 3 tons per acre of dry mulch. Place straw mulch so that it is loose enough for sunlight to penetrate and air to circulate, but dense enough to shade the ground, reduce water evaporation, and materially reduce soil erosion. Anchor using hydraulically applied tackifier, crimping disc, or sheep's-foot roller approved by the Agency or methods specified in the Special Provisions.

Provide blower equipment that uses air pressure with an adjustable spout that uniformly applies dry mulch at constantly measured rates. Apply the materials using a sweeping, horizontal motion of the nozzle.

**(2) Tacking** - Straw mulch may be tackified using hydraulically applied tacking agents or mechanical methods at the following rates of application:

**a. Hydraulically Applied Tacking Agents:**

- **Liquid Stabilizer Emulsions** - Dilute the emulsion with water at a rate of one part emulsion to 30 parts water. Apply the diluted mixture at the rate of 865 gallons per acre unless the manufacturer recommends a greater rate of application.

- **Dry Powder Tackifier** - Apply at 80 pounds per acre with 2,000 pounds of hydromulch fiber unless the manufacturer recommends a greater rate of application.

**b. Mechanical Methods** - Straw mulch may be mechanically tackified using a crimping disk or sheep's-foot roller.

- **Crimping Disc** - A heavy disk with flat, scalloped discs approximately 1/4 inch thick, having dull edges and spaced no more than 9 inches apart.

- **Sheep's-Foot Roller** - Modified sheep's-foot roller equipped with straight studs, made of approximately 3/4 inch steel plate, placed approximately 8 inches apart and staggered. Ensure that the studs are not less than 6 inches long or more than 6 inches wide, and rounded to prevent withdrawing the straw from the soil. Use a roller with enough weight to incorporate the straw sufficiently into the soil providing a uniform surface cover.

**(e) Slope and Channel Liner Matting** - Ensure that the matting is installed according to the plans, these Specifications, or the manufacturer's recommendations, whichever is more stringent. Within 25 feet of water resources or as indicated, install only matting that is fully biodegradable (photodegradable is not acceptable).

**(1) Area Preparation** - Remove all materials (vegetation, rocks, wood, etc.) larger than 2 inches in size. Smooth the surface and remove undulations sufficient to allow the matting to be placed in complete contact with the soil.

**(2) Seeding** - Apply seeding to all disturbed areas, including the area where matting is required, according to one of the following:

**a. Seeding Prior to Matting Installation** - Apply according to Section 01030. This method is preferred.

**b. Seeding After Matting Installation** - This method is allowed only if specified in the Special Provisions or approved. Apply according to Section 01030 at double the application rate for seed.

**c. Single Application - Matting and Seed**:

- **Hydraulically Applied Matting** - Apply seed at double the rate specified in Section 01030. Thoroughly mix seed, fertilizer, and matting material.

- **Manually Applied (Pre-seeded) Matting** - Pre-seed the matting at double the rate specified with the seed mix specified in Section 01030.

**(3) Matting Placement** - Apply matting loosely so it is in complete contact with the soil to prevent erosion occurring beneath it. Apply mat and fasteners as shown. Construct check slots on all channel applications and on slope applications when shown or specified.

**00280.45 Runoff Control BMP** - Install runoff control BMP as shown and according to the following:

**(a) Check Dams** - Construct check dams as shown or directed.

- **Type 1: Aggregate** - Place aggregate in the ditch section with the center low point below the outside edge.

- **Type 2: Straw Bales** - Straw bales are not acceptable for use as check dams except in emergency situations and when approved at each location. If straw bales are used as check dams, replace with another acceptable check dam as soon as practicable but no longer than seven calendar days.

- **Type 3: Biofilter Bags** - Place aggregate in ditch section and extend check dam with biofilter bags sufficient to direct flow over aggregate weir. Aggregate weir may be replaced with additional biofilter bags if approved.

- **Type 4: Sand Bags** - Place aggregate in ditch section and extend check dam with sand bags sufficient to direct flow over aggregate weir. Aggregate weir may be replaced with additional sand bags if approved.

- **Type 5: Prefabricated System** - Install prefabricated systems according to the plans, Special Provisions, and the manufacturer's recommendations. Field fabricated systems are not acceptable.

**(b) Diversion Dikes and Swales** - Construct diversion dikes and swales above the cut slope to divert runoff from undisturbed areas away from disturbed slope areas. Convey runoff to an undisturbed area and discharge in a non-erosive manner.

Construct diversion dikes and swales at the toe of fill slopes to divert and convey sediment laden water to a sediment control facility. Compact dike material according to the Agency Manual of Field Test Procedures.

Immediately after construction of diversion dikes and swales, place temporary seed and mulch according to Section 01030, or place erosion matting and seed as directed.

**(c) Temporary Drainage Curbs** - Construct temporary drainage curbs as shown or directed.

**(d) Temporary Slope Drains** - Construct watertight slope drains and extend as the embankment height increases. Construct temporary slope berms at the top of embankment slopes to direct water into the drains until permanent drainage structures are completed.

**(e) Flow Spreader** - A flow spreader is a device that receives channeled runoff and uniformly disperses it along the length of the spreader. It may be constructed of clean aggregate in a berm or trench or lumber or similar materials. Place the flow spreader to discharge water into a stabilized area at non-erosive velocities. See the plans for details and locations of this device.

**00280.46 Sediment Control BMP** - Install sediment control BMP as shown and according to the following:

**(a) Construction Entrances** - Install construction entrances at every point of access onto paved surfaces.

When construction entrances are in use and mud and dirt tracking is still evident, take additional steps to eliminate tracking by hosing off tires before vehicles leave the site, or by modifying construction techniques or work operation. Perform tire washing on gravel pads. Use silt-trapping structures to collect and drain wash water before it leaves the construction site.

**(b) Tire Wash Facility** - Excavate the area for installation of the tire wash facility. Install subgrade geotextile, aggregate base coarse, reinforced concrete, and water as shown.

**(c) Sediment Fence** - Construct supported (mesh and metal posts) and unsupported (no mesh) as follows:

- When installing geotextile and mesh, or geotextile alone, use a continuous roll of geotextile cut to the length of the barrier to avoid joints.
- Manufacturer's factory seams are acceptable. Field sewn seams are not acceptable.
- Drive posts into undisturbed soil as shown.
- Securely fasten the geotextile (and mesh) to the upslope side of the posts. Securely fasten each end of the geotextile (and mesh) to the end posts.
- Use stitched loops over posts for unsupported silt fence.
- Excavate a trench on the upslope side of the fence and place geotextile to the bottom of the trench. Backfill the trench with native material and compact.
- Attach the supported sediment geotextile to the wire mesh.
- Install the manufactured silt fence system according to the plans, Special Provisions, and manufacturer's recommendations. Connect end of rolls as shown.

**(d) Inlet Protection** - Construct inlet protection that directs flows through the control and into the inlet.

- **Type 1: Sediment Fence** - Install supported sediment fence around the perimeter of the inlet according to 00280.46(c).

- **Type 2: Geotextile/Wire Mesh/Aggregate** - Place wire mesh over the inlet grate. Place sediment fence geotextile over the wire mesh and perimeter area near the inlet. Install aggregate over the geotextile fabric.

- **Type 3: Prefabricated Filter Inserts** - Install prefabricated filter inserts according to the plans, Special Provisions, and manufacturer's recommendations. Prefabricated inserts with provisions for overflow are allowed only when accompanied by additional BMP to prevent the potential of sediments entering project storm systems. Field fabricated inserts are not allowed.

- **Type 4: Biofilter Bags** - Install biofilter bags according to the plans.

- **Type 5: Masonry** - Install concrete masonry units around the perimeter of the inlet. Place sediment fence geotextile around the outside perimeter, up the outside face, and on the top of masonry units. Place aggregate over the geotextile fabric and flush with the top of masonry units.

- **Type 6: Sod** - Install sod around the perimeter of inlets within 36 hours of harvest of the sod.

**(e) Sediment Barriers:**

- **Type 1: Straw Bales** - Straw bales are only acceptable for use as short-term emergency containment. Receive approval before each use of straw bales and remove within 30 calendar days of installation unless directed to replace with new bales.

- **Type 2: Biofilter Bags** - Place and arrange biofilter bags as shown or directed.

- **Type 3: Wattles** - Place and arrange wattles as shown or directed.

- **Type 4: Sand Bags** - Place and arrange sand bags as shown or directed.

- **Type 5: Brush Barrier** - Place brush barrier as shown or directed. Place woody debris in a linear pile.

- **Type 6: Filter Berm** - Place and arrange filter berms as shown or directed. Place rock in an evenly spread, trapezoidal berm.

- **Type 7: Prefabricated Barrier System** - Install prefabricated barrier systems according to the plans, Special Provisions, and manufacturer's recommendations. Field fabricated systems are not allowed.

**(f) Sediment Mat** - Place sediment mats a minimum of 20 feet downstream of work areas. Install mats individually or in groups on the stream bottom. Remove the mats not later than 48 hours after stream activities are complete. Remove them from the Project site, or if approved, place them on the stream bank and cover with permanent seeding.

**(g) Temporary Scour Basin** - Construct temporary scour basins at the outfall ends of temporary slope drains or as shown.

**(h) Temporary Sediment Trap** - The trap may be formed by constructing a berm or by partial or complete excavation. Direct the discharge flow to a stabilized conveyance outlet or level spreader.

**00280.47 Work Quality** - Protect areas according to 01030.49.

**00280.48 Emergency Materials** - Provide, stockpile, and protect emergency materials on-site for unknown weather or erosion conditions. A list of emergency materials will be listed in the Special Provisions. Replenish emergency materials as they are used.

The emergency materials are in addition to the other erosion control materials required to implement and maintain the ESCP.

Remove all unused emergency materials from the Project site at the completion of the Project.

**Maintenance**

**00280.60 General** - Maintain installed erosion and sediment control devices in good working order at all times. Keep the devices in place until the Agency issues notification of acceptance of stabilization. All maintenance and repairs are at no additional cost to the Agency.

**00280.61 Ineffective Controls** - If a control feature does not function effectively, immediately repair, replace, or provide additional devices. Devices repaired, replaced, or added due to improper installation, insufficient maintenance, or damage from Contractor operations will be made at no additional cost to the Agency.

**00280.62 Inspection and Monitoring** - Ensure that regular site inspection and monitoring is performed according to the schedule and record keeping requirements of the NPDS permit.

**(a) Inspection** - Perform general site inspection, complete all applicable parts of the ODOT Erosion Control Monitoring Form, and submit the Form to the Agency as follows:

- Weekly for active sites
- Every two weeks for inactive sites
- When direct by the Engineer

**(b) Rainfall** - Furnish and install a rain gauge at the Project site. Notify the Agency if 1/2 inch or more of rainfall occurs within a 24 hour period. As soon as practicable, but not later than 24 hours, after 1/2 inch or more of rainfall occurs, including weekends and holidays, inspect the entire Project to determine the condition of all erosion and pollution control devices.

**(c) Monitoring Receiving Stream** - Observe and record color and turbidity or clarity within 30 feet upstream and downstream of locations where surface waters from the construction site enter the receiving stream. Note whether sheen and floating matter are present or absent. Describe any apparent color and the clarity of the discharge, and any observable difference in comparison with the receiving stream.

If a significant permit noncompliance or serious water quality issues occur which may endanger health or the environment, verbally report to the Engineer within 24 hours and submit a written report within 5 calendar days.

**00280.63 Sediment Removal** - Remove sediment and upgrade or repair the devices as needed as soon as practicable, but not later than two days after the surrounding exposed ground has dried sufficiently to prevent further damage from equipment needed for repair operations. If rainfall continues

over a 24 hour period, or other circumstances that preclude equipment operation in the area, hand carry and install additional sediment control devices with best management practices and approved by the Agency.

**(a) Catch Basins** - Maintain catch basin inserts and other forms of inlet protection by removing trapped sediment when storage capacity has been reduced by 50%.

**(b) Sediment Controls** - Remove sediment from sediment fences, sediment barriers, check dams, and sediment traps once it has reached one third of the exposed height of the device or storage depth. Replace aggregate and rock filter material with new aggregate material when the sediment reduces the filtering capacity of the device by one half. Replace biofilter bags with clean, washed bags when removing sediment from them. Wash bags in an approved sediment control area.

**(c) Paved Areas** - Keep all paved areas clean for the duration of the Project. Use cleaning methods that do not transport sediment-laden water to receiving streams.

**(d) Construction Entrances** - Add and remove aggregate or other specified material as needed to maintain the proper function of the construction entrances.

**(e) Permanent Stabilization** - Restabilize within two calendar days of disturbance all areas disturbed by the Contractor's operations or other causes including wind, water, and vandalism.

**(f) Straw Bales** - Replace straw bales when they become non-functional or, at a minimum, on an annual basis or at the beginning of each construction season as appropriate.

## Finishing and Clean Up

**00280.70 Removal** - Within 30 days of the notification of acceptance of permanent stabilization, remove temporary erosion and sediment control devices and materials from the area. Remove accumulated sediment before removing the devices and materials. Immediately shape and permanently stabilize areas affected by the removal process. All temporary erosion and sediment control features that are not incorporated into the permanent work remain the property of the Contractor. Do not remove temporary erosion and sediment control devices before permanent stabilization is accepted.

**00280.71 Sediment Disposal** - Regrade removed sediment into slopes or remove and dispose of off-site according to 00290.20. Do not flush sediment-laden water into waterways or drainage systems.

## Measurement

**00280.80 Measurement** - Quantities of work performed under this Section will be measured according to the following:

**(a) Lump Sum Basis** - No measurement of quantities will be made for lump sum items.

**(b) Unit Basis** - Unit basis items will be measured on the unit basis, of each device or location where the device is constructed or placed.

**(c) Length Basis** - Length basis items will be measured on the length basis along the line and grade of the item or device constructed or placed.

- Flow spreaders and diversion dikes and swales will be measured along the long axis.
- Sediment barrier, when measured on the length basis, will be measured along the long axis of the barrier regardless of type.

- Temporary slope drains will be measured from the beginning of the metal end pieces to the end of the drain. Measurement will be made when each installation is at its maximum length.

**(d) Area Basis** - Area basis items will be measured on the area basis along the ground surface, and computed to the square foot or acre as applicable.

**(e) Limitations** - The quantities of emergency materials listed in 00280.48 of the Special Provisions are included in the items listed in the Contract Schedule of Items.

**Payment**

**00280.90 Payment** - The accepted quantities of work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following items:

| | Pay Item | Unit of Measurement |
|---|---|---|
| (a) | Erosion Control | Lump Sum |
| | **Erosion Prevention** | |
| (b) | Plastic Sheeting | Square Yard |
| (c) | Chemical Soil Binder | Acre |
| (d) | Chemical Dust Control | Acre |
| (e) | Temporary Mulching | Acre |
| (f) | Matting | Square Yard |
| | **Runoff Control** | |
| (g) | Check Dam | Each |
| (h) | Temporary Diversion Dike/Swale | Foot |
| (j) | Temporary Slope Drain | Each or Foot |
| (j) | Flow Spreader | Foot |
| | **Sediment Control** | |
| (k) | Construction Entrance | Each |
| (l) | Tire Wash Facility | Each |
| (m) | Sediment Fence, _____ | Foot |
| (n) | Inlet Protection | Each |
| (o) | Sediment Barrier | Each or Foot |
| (p) | Sediment Mat | Square Yard |
| (q) | Temporary Scour Basin | Each |
| (r) | Temporary Sediment Trap | Each |

Item (a) includes:

- providing the Erosion and Sediment Control Manager
- developing, revising, and documenting the ESCP
- mobilization
- monitoring activities
- furnishing, stockpiling, protecting, restocking, and removing emergency materials
- preparing Project for winter shut-down

- inspecting, maintaining, and removing erosion control devices
- restoring, mulching, tacking, and seeding all disturbed ground, work, and storage areas not otherwise covered

When only item (a) is listed in the Contract Schedule of Items, no separate or additional payment will be made for modifications or additions to the BMP that become necessary for permit compliance during construction.

Partial payments for item (a) will be made as follows:

- When the initial Contractor developed ESCP, narrative, and schedule are complete and accepted, and the initial erosion control devices are installed ..... 25%
- When 50 percent of the Contract is complete, excluding advances on materials ..... 25%
- When 75 percent of the Contract is complete, excluding advances on materials ..... 25%
- At completion of the Contract and all erosion control devices are either removed from the Project site or are fully functioning as permanent BMP..... 25%

Item (b) includes protecting exposed slopes with plastic sheets, anchoring devices, and toe protection maintenance.

Item (f) includes preparing the slope surface and stabilizing exposed soil with erosion matting material.

Items (g), (n), and (o) includes the biofilter bags, sand bags, and sediment fence as applicable.

Emergency materials that are incorporated into the Project will be paid for under the appropriate items listed in the Contract Schedule of Items.

Payment will be payment in full for furnishing and placing all materials, and for furnishing all equipment, labor, and incidentals necessary to complete the work as specified.

No separate or additional payment will be made for:

- removing and disposing of sediment build-up behind sediment fences and sediment barriers
- removing and reinstalling required appurtenances to modify temporary slope drains as the embankment slopes are changed
- constructing and removing temporary slope berms
- applying dust control
- erosion control for work outside the construction limits including but not limited to borrow pits, haul roads, disposal sites, and equipment storage sites

## Section 00290 - Environmental Protection

### Description

**00290.00 Scope** - This Section describes the Contractor's duties and obligations with respect to protection of the land, waters, air, wildlife, and other environmental resources of the State.

Comply with all applicable federal, State, and local environmental, health, safety, and other laws, acts, statutes, regulations, administrative rules, ordinances, orders, and permits, as they may be amended from time to time (referred to in this Section as "Laws"). Comply with all applicable Laws, whether or not specifically referenced in this Section or elsewhere in the Contract.

Federal, State, and local agencies known to have enacted ordinances and regulations relating to environmental pollution and the preservation of natural resources that may affect the performance of the Contract are listed in 00170.01.

If any provision of these Specifications appears to conflict with one or more Laws, the more stringent requirement shall apply, unless the Engineer directs otherwise in situations where these Specifications are more stringent.

Comply with all additional requirements or Laws imposed by any agency or governmental unit having authority to enforce the Endangered Species Act (ESA) and other Laws.

All penalties assessed against the Agency because of the Contractor's violation of Laws referenced above, or permits applicable to the Project, will be withheld from the progress or final payments according to 00195.50(e).

No condition of the Contract releases the Contractor from any responsibility or requirement under any environmental or other Law.

**00290.10 Staging and Disposal Sites** - Locate staging areas and disposal sites in previously improved or disturbed sites, including existing roadways, pullouts, turnouts, parking lots, and storage yards that have been compacted, graveled and paved, unless otherwise approved, in writing, by the Engineer.

**00290.11 Water Conservation** - Minimize use of water by maintaining equipment, immediately fixing water line and container leaks, ensuring water valves are turned off promptly, and using recycled water when feasible.

**00290.20 Waste, Hazardous Waste, and Hazardous Substances** - Comply with all applicable federal, State, and local Laws as they pertain to the storage, handling, management, transportation, disposal, and documentation of waste, hazardous waste, and hazardous substances.

**(a) Hazard Communication** - Ensure the following documents are readily available on-site to employees, subcontractors and inspectors:

- Material Safety Data Sheets (MSDS) for all hazardous substances stored or used on-site.
- Written hazard communication program, including employee training documentation.

The Oregon Occupational Safety and Health Division (OR-OSHA) provides guidance to meet these requirements in their publication "Hazard Communication: A Safe-Work-Practice Guide".

**(b) Fuel Storage** - Store fuel according to the current edition of the International Fire Code and all applicable federal, State, and local Laws.

If total fuel and petroleum storage, in containers 55 gallons or larger, exceeds 1,320 gallons, comply with the applicable spill prevention control and countermeasures (SPCC) requirements of 40 CFR 112. If applicable, submit the professional engineer stamped SPCC plan, 10 days before the preconstruction conference. Comply with the plan and keep a copy on-site and readily available. The SPCC plan may be combined with the Pollution Control Plan required under 00290.30(b).

**(c) Waste Management:**

**(1) General** - Prepare a hazardous waste determination for all waste generated on-site to determine whether the waste is classified as hazardous waste, universal waste, excluded waste, waste water, or solid waste. The Agency may provide initial analytical results for some wastes such as lead-based paint and asbestos containing material. Conduct additional testing necessary for waste characterization and disposal using an Oregon Environmental Laboratory Accreditation Program (ORELAP) accredited laboratory, under chain of custody procedures.

Segregate all demolition debris according to its intended end use (reuse, recycle, or dispose). If required, store in designated areas in a manner that prevents contamination to soil and water and prevents fugitive dust emissions. Remove all waste materials recovered from the site unless otherwise approved, in writing. Retain disposal and recycling facility receipts for wastes generated on-site for at least one year after completion of the Project. Provide copies of the receipts to the Engineer within seven calendar days of the disposal or recycling.

Dispose of noxious weeds and Specified Weeds according to Section 01030.

Do not reuse demolition material, coated or treated materials, or concrete and masonry materials in waters of the State or U.S.

**(2) Clean Fill** - Clean fill, as defined by OAR 340-093-0030(13), becomes the property of the Contractor at the place of origin.

**(3) Reuse, Recycle, and Dispose of Materials** - Waste materials become the property of the Contractor at the place of origin. Unless prohibited by Law, treat waste materials according to the following priority:

- Reuse demolition debris on-site.
- Recycle demolition debris.
- If it is not feasible to reuse or recycle, ("feasible" is defined as a facility that is capable of handling the material, will take the material and the cost of transportation plus the cost to reuse or recycle the material is equal to or less than the costs of disposal) dispose of waste material according to the following:

**a. Burnable Materials** - Dispose of burnable material, that cannot be reused or recycled, according to 00290.30(c-3).

**b. Woody Matter** - Woody matter may be burned according to 00290.30(c-3) or may be chipped to a size of no more than 3 inches in any direction then uniformly spread over selected landscape areas, as directed, in loose layers not more than 3 inches thick. Burying wood, stumps, or other woody material is not allowed.

**c. Preserved and Coated Wood** - Dispose of chemically preserved wood, pressure treated wood, and wood coated with latex paint that does not contain lead according to the following:

- Reused whole.
- Provided to others to reuse.
- Burned as fuel at an energy recovery facility with a DEQ or LRAPA stationary source permit.
- Delivered to a DEQ permitted municipal solid waste landfill or a DEQ permitted construction and demolition landfill.

Dispose of wood coated with lead-containing paint at a DEQ permitted municipal solid waste landfill or a DEQ permitted construction and demolition landfill.

Test wood as required by the receiving facility.

**d. Concrete and Masonry** - Concrete and masonry, when not recycled, may be reused to fill basements or be buried in embankments on-site, provided that the materials are broken into pieces not exceeding 15 inches in any dimension, and placed so that:

- No part of any piece is within 2 feet of the top, side or end surface of the basement, embankment, or other structures.
- The fill or embankment is constructed and compacted according to 00330.42 and 00330.43.

If the Engineer provides written approval, concrete may be reused as aggregate if it meets the requirements of Section 02610 through Section 02690.

**e. Disposal on Agency-Owned Lands** - Do not dispose of waste materials on Agency-owned or Agency-controlled lands, except when shown, specified, or allowed in writing to be used as fill. If allowed, place waste materials only at specified locations, as directed.

**f. Off-Site Disposal** - Dispose of waste at an energy recovery facility with a DEQ or LRAPA Stationary Source Permit, at a permitted landfill, or at other waste disposal facilities as required depending on that type of waste.

Subject to local zoning codes and the requirements of 00280.03, materials that meet the definition of clean fill may be placed on other properties in a manner consistent with environmental requirements, and with written permission of the property owner. Furnish the Engineer a copy of the signed agreement with the owner before placement of the clean fill material. Do not place the clean fill material at locations that are visible from a public highway, road, or street unless the site is zoned and licensed for landfill.

**(d) Hazardous Waste Management** - Determine the generator category for the Project, based on the amount and type of hazardous waste generated. Use the following definitions. If they differ from current Laws, use the current Laws.

- **Conditionally Exempt Generator** - A conditionally exempt generator (CEG) generates 220 pounds or less of hazardous waste per month or 2.2 pounds or less of acutely hazardous waste per month and accumulates up to 2,200 pounds hazardous waste or 2.2 pounds acutely hazardous waste on-site.

- **Small Quantity Generator** - A small quantity generator (SQG) generates 220 pounds to 2,200 pounds hazardous waste per month, can accumulate up to 13,200 pounds hazardous waste on-site (or more with a permit), and ship hazardous waste off-site within 180 days of generation.

- **Large Quantity Generator** - A large quantity generator (LQG) generates more than 2,200 pounds hazardous waste per month or more than 2.2 pounds acutely hazardous waste per month, has no accumulation limit, but ship all hazardous waste off-site within 90 days of generation.

In addition to current Laws, comply with the following:

- If the Project generator category is SQG or LQG, or if it requires a hazardous waste identification number, obtain a Resource Conservation and Recovery Act (RCRA) site identification number from the DEQ. Pay all fees and complete the RCRA application form as follows:
  - List the Contractor as the Site Contact, the Site Operator, the Hazardous Waste Form Contact, and the Hazardous Waste Fee Contact.
  - List ODOT as the Site Location, the Land Owner, and the Legal Owner.
  - Fill in the Comments section with the following statement:

    "[Contractor name] is responsible for the following: All hazardous waste management on site for the duration of this construction project, for delivery of the waste to a permitted recycling or disposal facility, and for all forms and fees associated with the hazardous waste management including cancellation of the RCRA site identification number at the end of the Project. ODOT is the owner of the waste and maintains long term responsibility for the waste as required by RCRA, excluding all wastes generated solely from materials brought to the site by the Contractor, which remain the property of the Contractor."
  - The Contractor may sign hazardous waste manifests for the off-site shipment of hazardous wastes as the "offeror" rather than as the "generator".
- Maintain all required waste management records, including monthly hazardous waste generation records, manifests, recycling and disposal receipts, test results, and annual DEQ reports. Submit monthly records to the Engineer by the fifteenth day of the following month and submit DEQ reports to the Engineer concurrently with DEQ. Keep copies for at least three years following completion of the Project and resolution of any regulatory violations or citations.
- If the quantity of hazardous waste projected to be generated meets the requirements for a CEG, store hazardous wastes on-site for no more than 180 days.
- If the quantity of hazardous waste projected to be generated meets the requirements for a SQG or for a LQG, prepare a Hazardous Waste Contingency Plan according to 40 CFR 265.51. Maintain a copy of the Contingency Plan on-site at all times during construction activities, readily available to employees and inspectors.
- If the project is SQG or LQG, retain a Certified Hazardous Materials Manager (CHMM) in good standing and with experience managing the hazardous wastes associated with the Project to oversee waste management at the site.
- All employees involved in the handling and management of CEG hazardous waste shall comply with the federal and State Laws for hazardous waste management. All employees involved in the handling of SQG and LQG hazardous waste shall be trained according to federal and State Laws. For LQC hazardous waste projects, keep employee training records on-site and readily available.

- If the quantity of hazardous waste generated in a month changes the generator category, immediately implement the requirements for the new category and comply with them for the remainder of the year. Complete the new documentation and training requirements within 30 calendar days of the change.
- Ensure hazardous waste containers are clearly and visibly labeled with the contents and accumulation start date, compatible with the contents and in good condition. Store them in a designated weather-protected area that is secured from public access, has secondary containment adequate to contain a release, and has sufficient aisle space to safely maneuver containers and respond to spills (minimum 30 inches).
- If hazardous waste will be treated on-site, obtain approval from DEQ and the Engineer for each specific treatment or recycling process, treat wastes within accumulation tanks or closed containers that meet RCRA requirements, conduct treatment within the storage time for the applicable generator category, maintain current copies of all required notifications and waste analysis plans readily available on-site and request DEQ technical assistance prior to starting any on-site recycling or treatment.

**(e) Hazardous Substance Transportation** - Comply with the following requirements for transportation of hazardous substances and hazardous waste:

- Train all employees involved in transportation and shipping as required by US DOT.
- Use drivers who have a commercial driver's license with a hazardous materials endorsement when required.
- Ship hazardous wastes from SQG and LQG projects using a DEQ registered hazardous waste transporter under a hazardous waste manifest.
- Ensure shipments are appropriately packaged and labeled, and vehicles are appropriately placarded.
- Submit copies of the completed manifests and documentation to the Engineer and retain copies for at least one year.

**(f) Unexpected Contamination** - If, during construction, unanticipated hazardous substances are discovered that threaten the health and safety of workers, the public, or the environment, do the following:

- Immediately remove all affected employees and secure the area to prevent access.
- Notify the Engineer immediately and provide written notification within 24 hours, setting forth a description of the hazardous substances encountered.

The Engineer will attempt to resolve the unanticipated situation expeditiously according to 00140.40. Delays to work due to the discovery of unexpected contamination shall be considered for exclusion from Contract time according to 00180.50(e).

**(g) Spills and Releases** - Obtain a response agreement with a professional on-call spill response team. The professional on-call spill response team, identified in the PCP, agrees to be available and respond to spills that cannot be cleaned up with on-site resources. A professional spill response team is a company or section of a company specifically dedicated to hazardous materials emergency spill response, insured, and bonded for hazardous materials cleanup, and employing experienced personnel certified according to 29 CFR 1920.120.

In the event of a spill or release of a hazardous substance or hazardous waste or any other material, do the following:

- Immediately commence response actions to protect human health and the environment. Follow the PCP, SPCC and Contingency Plan, as appropriate. If any of the provisions in these plans conflict, implement the actions providing the greatest protection of public health and safety and the environment.
- If the spill can not be safely contained and cleaned up with on-site resources, activate the professional on-call spill response team.
- Immediately notify the Engineer.
- If the quantity released exceeds the State or Federal reportable quantities, or if the release impacts or threatens to impact any surface water body, immediately notify DEQ by the Oregon Emergency Response System (OERS) at 1-800-452-0311 and the EPA and USCG through the National Response Center (NRC) at 1-800-424-8802 (Federal reportable quantities or spills impacting or potentially impacting water only). If the quantity released is unknown, proceed with OERS and NRC notifications. Reportable quantities are listed at 40 CFR 302.4 and OAR 340-142-0040 to OAR 340-142-0050.
- Conduct cleanup of the released material according to all applicable Laws and DEQ requirements. Cleanup to background levels unless otherwise agreed to by the Agency in writing.
- Provide a written report to the Engineer, using the DEQ Spill/Release Report form, within 10 calendar days of completing spill response, but no more than 30 calendar days after the initial event. If the spill was reported to DEQ, submit the report to DEQ concurrently. Include a description of how future releases will be prevented.

**00290.29 Health and Safety** - Comply with all applicable health and safety Laws as they pertain to the hazardous substances and wastes used, stored and generated on-site. If any of these requirements are in conflict, the more stringent requirements apply.

**00290.30 Pollution Control** - Prevent, control, and abate pollution of the environment. Comply with new or amended environmental pollution Laws, not contemplated at the time of bid preparation, according to 00140.50 and ORS 279C.525.

**(a) Pollution Control Measures** - Comply with the following requirements:

**(1) General:**

- Allow no pollutant of any kind (e.g., petroleum products or fresh "green" concrete) to come in contact with an active flowing stream or waters of the State and U.S.
- Comply with the erosion prevention and sediment control requirements of Section 00280 and all applicable DEQ NPDES 1200 Permit requirements.
- Do not cause turbidity to waters of the State and U.S. outside of regulated levels.

**(2) Materials and Waste Management:**

- Store construction equipment, materials and debris in a manner that prevents contamination of water and soil and prevents fugitive dust.
- Store hazardous substances in the original containers or labeled compatible containers according to State Fire Marshal's regulations, International Fire Code and product MSDS.
- Locate areas for storing fuels and other potentially hazardous materials at least 150 feet away from any waters of the State and U.S. or storm inlet, unless otherwise approved by the Engineer.

- Dispose of material waste according to 00290.20.
- Do not use treated timbers within any waters of the State and U.S.

**(3) Equipment Fueling, Repair and Maintenance:**

- Promptly correct or repair operational procedures, leaks, or equipment problems that may cause pollution at the Project Site. If soils or other media become contaminated as a result of operational procedures or equipment problems, remove and dispose of them according to applicable Laws and 00290.20(g).
- Locate areas for parking, refueling and servicing mobile equipment and vehicles at least 150 feet away from any waters of the State and U.S. or storm inlet, unless otherwise approved by the Engineer.
- For large equipment that is not easily moved, prevent fuel and operating fluids from reaching any waters of the State and U.S. or storm inlet by, at a minimum, using spill containment systems designed to completely contain potential spills during all refueling and equipment repair operations.

**(4) Equipment Cleaning and Washouts:**

- Inspect and clean all equipment prior to operating it within 150 feet of any waters of the State and U.S. or storm inlet. Check for fluid leaks and remove all external oil, grease, weed seed, and dirt.
- Do not discharge untreated wash and rinse water into the any waters of the State and U.S. or storm inlet.
- Establish wash areas that contain all fluids and debris, at least 150 feet from any waters of the State and U.S. or storm inlet, such that untreated waste water does not impact those systems.
- Clean concrete equipment in washout areas that contain all fluids and debris. Recycle washout materials into fresh mixes or dispose of according to applicable permits.

**(5) Off Site Tracking:**

- Limit water leakage from trucks carrying saturated soils to less than 1 gallon per hour before allowing them to leave the Project Site.
- Remove all loose dirt and debris from trucks prior to leaving the Project Site.

**(6) Other Spill Prevention and Response Measures:**

- Inspect heavy equipment, storage containers, staging areas and other potential sources of hazardous substances daily to identify and prevent potential releases.
- If flooding of the Project site is expected to occur within 24 hours, evacuate areas used for staging, access roads, or storage and remove materials, equipment, and fuel.
- Immediately contain and repair leaking equipment or containers and cleanup any releases according to 00290.20(g).
- Maintain hazardous material containment kits and spill containment kits on-site to facilitate the cleanup of hazardous material spills on dry-land and/or waters of the State and U.S.

**(b) Pollution Control Plan (PCP)** - Develop and submit a PCP to prevent pollution related to Contractor operations for approval 10 calendar days before the preconstruction conference. Maintain a copy of the PCP on-site at all times during construction activities, readily available to employees and inspectors. Ensure that all employees comply with the provisions of the PCP.

Include the following information in the PCP:

- Identify a professional on-call spill response team.
- Identify all contractor activities, hazardous substances used and wastes generated.
- Describe how hazardous substances and wastes will be stored, used, contained, monitored, disposed of and documented. Include pollution prevention, spill response, waste reduction, dust prevention, off site tracking prevention, washout facility design, vehicle and equipment fueling and maintenance procedures, employee training and emergency contact information.
- Include the waste determination results from 00290.20(c-1). Provide reuse, recycle, and disposal options, the reason for selecting that alternative, and estimated quantities for each reuse, recycle, and disposal option.
- Include or refer to the SPCC plan and the hazardous waste contingency plan, if required.
- Include scaled site plans showing locations for hazardous substance storage, spill response equipment, communications equipment and fire suppression equipment.

A "Pollution Control Plan Contractor Packet" is available from the Agency.

**(c) Air Pollution Control Measures** - Comply with ORS 468, ORS 468A, OAR 340-014, OAR 340-200 through OAR 340-268, and all other applicable Laws.

**(1) Vehicle and Equipment Idling** - Establish truck staging areas for diesel-powered vehicles located where truck emissions have a minimum impact on sensitive populations, such as residences, schools, hospitals and nursing homes.

Limit idling of trucks and other diesel powered equipment to five minutes, when the equipment is not in use or in motion, except as follows:

- When traffic conditions or mechanical difficulties, over which the operator has no control, force the equipment to remain motionless.
- When operating the equipment's heating, cooling or auxiliary systems is necessary to accomplish the equipment's intended use.
- To bring the equipment to the manufacturer's recommended operating temperature.
- When the outdoor temperature is below 20 °F.
- When needed to repair equipment.
- Under other circumstances specifically authorized by the Engineer.

**(2) Dust Control and Permitting** - Prevent airborne dust and fugitive dust emissions from construction activities including rock, concrete, and asphalt crushing operations and obtain permits according to 00160.70. Do not use oil, waste, waste water, or other illegal materials as dust suppressants.

**(3) Burn Restrictions** - Burn wastes only if open burning is allowed by State, LRAPA, and local burning Laws. Obtain and comply with all required permits including DEQ permits required by OAR 340-264-0010 through OAR 340-264-0020, LRAPA permits, and local fire district permits. Provide copies of all permits to the Engineer prior to burning. Do not conduct burning within

riparian areas. Conduct burning at locations where existing structures will not be damaged and where smoke will not impact traffic. Do not burn the following materials on-site:

- Rubber products
- Tires
- Plastic
- Wet garbage
- Petroleum and petroleum treated materials
- Asphalt or industrial waste
- Any material that creates dense or noxious odors
- Painted materials
- Asbestos, mercury or PCB containing materials or equipment
- Hazardous wastes
- Scrap wiring or electrical equipment
- Painted or treated wood

Buildings intended for demolition may be burned by the local fire department for training purposes. Contact the local fire department for applicable restrictions.

**00290.32 Noise Control** - Comply with ORS 467, OAR 340-035, all other applicable Laws, and the following construction noise abatement measures:

- Do not perform construction within 1,000 feet of an occupied dwelling on Sundays, legal holidays, or between the hours of 10:00 p.m. and 6:00 a.m. on other days, without the approval of the Engineer.
- Use equipment with sound control devices no less effective than those provided on the original equipment. Equipment with un-muffled exhausts is prohibited.
- Use equipment complying with pertinent equipment noise standards of the EPA.
- Do not drive piling or perform blasting operations within 3,000 feet of an occupied dwelling on Sundays, legal holidays, or between the hours of 8:00 p.m. and 8:00 a.m. on other days, without the approval of the Engineer.
- Mitigate the noise from rock crushing or screening operations performed within 3,000 feet of all occupied dwellings by placing material stockpiles between the operation and the affected dwellings, or by other means approved by the Engineer.

If a specific noise impact complaint occurs during the construction of the Project, one or more of the following noise mitigation measures may be required, at no additional cost to the Agency, as directed by the Engineer:

- Locate stationary construction equipment as far from nearby noise sensitive properties as feasible.
- Shut off idling equipment.
- Reschedule construction operations to avoid periods of noise annoyance identified in the complaint.
- Notify nearby residents whenever extremely noisy work will be occurring.
- Install temporary or portable acoustic barriers around stationary construction noise sources.
- Operate electric-powered equipment using line voltage power or solar power.

**00290.34 Protection of Fish and Fish Habitat** - Comply with the Laws of the Oregon Department of Fish and Wildlife, National Marine Fisheries Service, and U.S. Fish and Wildlife Service, and the rules and practices developed through the Oregon Plan for Salmon and Watersheds. Conduct operations to avoid any hazards to the safety and propagation of fish and shellfish in waters of the State and U.S.

**(a) Regulated Work Areas** - Perform work within regulated work areas only within the regulated in-water work periods. Do not allow equipment to enter any waters of the State or U.S. or the regulated work area except as allowed in permits issued for the Project.

The regulated work area, if any, will be identified in the Special Provisions.

**(b) Prohibited Operations** - Except where allowed by the Contract or by permit, do not:

- Blast underwater
- Use water jetting
- Release petroleum products or chemicals in the water
- Disturb spawning beds
- Obstruct stream channels
- Cause silting or sedimentation of waters of the State and U.S.
- Use treated timbers within the regulated work area
- Impede adult and juvenile fish passage, including intermittent streams

**00290.36 Protection of Wildlife and Wildlife Habitat** - Comply with the Laws of the Oregon Department of Fish and Wildlife and U.S. Fish and Wildlife Service. Conduct operations to avoid any hazards to the safety and propagation of wildlife.

**(a) Migratory Birds** - Comply with the Migratory Bird Treaty Act (16 U.S.C. 703-712) which protects most species of birds in Oregon and prohibits the removal of nests containing eggs and dependent young. Migratory birds include most birds in Oregon, except pigeons, house sparrows, and starlings. Except where allowed by the Contract and by permit, do not disturb a migratory bird nest containing eggs or dependent young, or the surface the nest is built on.

If migratory bird nests are encountered that contain eggs or dependent young, stop all actions that may disrupt the nest and contact the Engineer. Do not resume work, that may disrupt nesting, until approved by the Engineer.

**(b) Bats** - Avoid destruction of bat colonies as shown.

**00290.38 Protection of Plants** - Plant habitats to be protected will be shown with the plant habitat boundaries flagged by the Engineer . Avoid destruction of plant habitats by ensuring construction personnel, equipment, and associated pollutants, including sediment, chemical contaminants, discharge water, non-native grass and weed seed, do not enter the habitat.

**00290.40 Protection of Forests** - - Obtain necessary permits according to ORS 477.625 and ORS 527.670, and comply with the Laws of any authority having jurisdiction for protection of forests.

**00290.41 Protection of Wetlands** - Comply with and require that all the Contractor's employees, agents, and subcontractors on the Project Site comply with the following:

- Clean Water Act Section 404 (33 U.S.C. 1344); Federal Rivers and Harbors Act of 1899, Section 10 (33 U.S.C. 403 et seq.).

- ORS 196.800 to ORS 196.990 (Oregon Removal-Fill law).
- ORS 390.805 to ORS 390.925 (Oregon Removal and Filling in Scenic Waterways law).
- All other applicable Laws governing preservation of wetland resources.

For the purposes of this Section, "wetland" or "wetlands" shall be understood to include wetlands as defined in 00110.20, as well as other jurisdictional waters of the State and U.S.

Willful violation of permit conditions and applicable laws exposes the offending Contractor and other violators to criminal and civil sanctions. Civil sanctions include, but are not limited to, the offender's sole liability for all costs associated with site restoration, maintenance and additional mitigation work required by federal or State authorities.

**(a) Identifying Wetlands** - Wetlands known to be on the Project Site will be shown and identified either as "permanently filled or excavated" or as "temporarily impacted". Wetlands to be protected will be shown as "no work zones".

**(b) Disturbing Wetlands** - If wetlands are shown, meet with the Agency Wetland Specialist, the Engineer, and inspector on-site prior to moving equipment onto the site or beginning any work, to ensure that all parties understand the locations of wetlands and the measures that shall be taken to protect them.

Ensure protection of no work zones as follows:

- Fence off no work zones using pedestrian safety fence or approved equivalent.
- Except as authorized by the Engineer for the purpose of installing or maintaining approved wetland protective measures, keep all persons, equipment and materials off no work zones.
- The Engineer has the authority to bar from the Project any person entering a protected site other than for the purpose of installing or maintaining protective measures.

Install all site protection for wetlands required by the Plans and Special Provisions prior to staging equipment or starting work near the site(s).

The Engineer may suspend work until the Contractor, Engineer, Agency Wetland Specialist, and other required federal and State personnel, if any, meet to determine damage to the site and the nature and scope of necessary site restoration and maintenance. The Engineer may require the Contractor to submit a written plan for protection of other sites for the duration of the Project before work resumes.

**00290.50 Protection of Cultural Resources** - Comply with all Laws governing preservation of cultural resources. Cultural resources may include, but are not limited to, dwellings, bridges, trails, fossils, and artifacts.

If cultural resources are encountered on the Project area or in material sources, and their disposition is not addressed in the Special Provisions, do the following:

- Immediately discontinue operations or move to another area of the Project Site or material source.
- Protect the cultural resource from disturbance or damage.
- Notify the Engineer.

The Engineer will do the following:

- Contact the Agency Archaeologist, to arrange immediate investigations.
- Arrange for disposition of the cultural resources. The Engineer may direct the Contractor to perform salvage operations as Extra Work.
- Notify the Contractor when to begin or resume construction operations in the affected area.

**00290.51 Protection of Sensitive Cultural Sites** - Comply with and require that all the Contractor's employees, agents, and subcontractors on the Project Site comply with all Laws applicable to the preservation and protection of sensitive cultural sites. The existence of any sensitive cultural sites affecting the Project, and the mandatory preservation and protection measures applicable to the sites, are determined according to the Laws including, but not limited to the following:

- National Historic Preservation Act (NHPA) of 1966, Section 106, codified in 36 CFR Part 800 (Protection of Historic Properties).
- ORS 97.740 to ORS 97.760, ORS 97.990(5), and ORS 97.990(6) (Indian Graves and Protected Objects).
- ORS 358.905 to ORS 358.955 (Archaeological Objects and Sites).
- ORS 390.235 to ORS 390.240 (Archaeological Sites and Historical Material).

Ensure protection for sensitive cultural sites according to the following:

- Except as authorized by the Engineer for the purpose of installing or maintaining approved sensitive cultural site protective measures, keep all persons, equipment, and materials off known sensitive cultural sites.
- Install all sensitive cultural site protection required by the plans and Special Provisions prior to staging equipment or starting work near the site(s).
- Instruct all Contractor and subcontractor personnel to regard the locations of these sites and their contents as confidential.

The Engineer has the authority to bar from the Project any person entering a protected site other than for the purpose of installing or maintaining protective measures.

If sensitive cultural sites are known to be on the Project, additional information will be provided in the Special Provisions.

**(a) Disturbing Known Sensitive Cultural Sites** - Willful violation of Laws exposes the offending Contractor and other violators to criminal and civil sanctions. Civil sanctions include, but are not limited to the offender's sole liability for all costs associated with monitoring, recovery, site restoration or other archaeological work required by Tribal, federal, and State authorities. Costs can exceed $100,000.

The Engineer may suspend work until the Contractor and the Engineer meet to determine damage to the site and the nature and scope of necessary site restoration and maintenance. The Engineer may require the Contractor to submit a written plan for protection of other sites for the duration of the Project before work resumes.

**(b) Disturbing Unknown Sensitive Cultural Sites** - If the Contractor finds a previously undiscovered sensitive cultural site, immediately cease all activities at that site, follow procedures listed in 00290.50, and notify the Engineer. If the Contractor inadvertently disturbs unknown sensitive cultural sites, but immediately ceases all activities and follows the procedures listed in 00290.50, the Agency, to the extent permitted by Article XI, section 7 of the Oregon Constitution and

by the Oregon Tort Claims Act, will indemnify, within the limits of the Tort Claims Act, the Contractor for costs associated with monitoring, recovery, site restoration or other required archaeological work, provided neither the Agency nor the State shall be required to indemnify the Contractor for such costs resulting from, arising out of or relating to the willful misconduct, negligence or other wrongful acts attributable to the Contractor or other persons on the Project site.

Delays to work due to new cultural resource finds will be considered for exclusion from Contract time according to 00180.50(e).

Work required for monitoring and site restoration for newly discovered sensitive cultural sites encountered by the Contractor will be paid according to Section 00197.

## Measurement

**00290.80 Measurement** - No measurement of quantities will be made for work performed under this Section.

## Payment

**00290.90 Payment** - The accepted quantities for work performed under this Section will be paid for at the Contract lump sum amount for the item "Pollution Control Plan".

Partial payments will be made as follows:

- When the initial PCP is approved ..... 20%
- When 30 percent of the Contract is complete, excluding advances on materials ..... 20%
- When 60 percent of the Contract is complete, excluding advances on materials ..... 20%
- When 90 percent of the Contract is complete, excluding advances on materials ..... 20%
- At completion of the Contract and all waste is removed from the Project site and all reports, receipts, and documents have been submitted ..... 20%

Payment will be payment in full for furnishing and placing all materials, and for furnishing all equipment, labor, and incidentals necessary to complete the work as specified.

Payment includes, but is not limited to, the following:

- Contractor's Pollution Control plan (PCP)
- Spill Prevention Control and Countermeasures (SPCC) plan
- Hazardous Waste Contingency plan
- Hazardous waste determination
- Determination of generator category
- The Certified Hazardous Materials Manager
- The Professional on-call Spill Response Team

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# Exhibit 8
# Stop-work order letter from County dated April 18, 2013

Department of Community Services
Land Use and Transportation Program

**MULTNOMAH COUNTY OREGON**

**1600 SE 190th Avenue, Suite 116**
**Portland, Oregon 97233**
**(503) 988-5508 phone**
**(503) 988-3389 fax**

**April 18, 2013**

Rick & Deborah Teeny
3116 SE Lovrien Avenue
Gresham, OR 97080

| | |
|---|---|
| **RE:** | **Stop Work Order Posted 3/15/13** |
| Location: | NE Interlachen Lane, Fairview, OR 97024 |
| State ID: | 1N 3E 21CB -03801 |
| Alt. Tax Account #: | R649632010 |
| Zoning: | Urban Low Density Residential District (LR-7) |
| Zoning Overlays: | Significant Environmental Concern (SEC) & Floodplain Development (FD) |
| Case#: | Under Review (UR)-2013-2844 |

Dear Property Owners,

This communication supports the *Stop Work Order*, posted on April 17, 2013, for your NE Interlachen Lane property (see attached aerial map). The County posted the *Stop Work Order* due to non-permitted property development activity, specifically non-permitted ground disturbing activities, conducted on the property, and non-permitted excavation and fill material placement, conducted within Fairview Lake adjacent to the property.

Your property is currently zoned *Urban Low Density Residential District (LR-7)*, with an overlay for *Significant Environmental Concern (SEC)*. The *LR-7* zone and *SEC* overlay area both have specific regulations governing the use and development of the property, which requires County review and approval prior to any change of use or development activity occurring. However, the County has no record of any recent permits issued or any land use decisions approved that would authorize any change in use or development of the property. In addition, the property has areas contained within the 100-year floodplain as designated by FEMA (Federal Emergency Management Agency). Properties within areas of special flood hazard are required to obtain a Flood Development permit prior to the commencement of development and use of the property, and adjacent in-water areas.

The development activities already conducted and any further development activities, especially as related to the posted *Stop Work Order*, without prior County authorization or review <u>are a violation of the following:</u>

→ *Multnomah County Code* ***(MCC) 11.15.2604*** *Uses (Urban Low Density Residential District [LR-7] zone),* ***MCC 11.15.6404*** *Uses SEC Permit Required,* ***MCC 29.336*** *Permits Required (Grading and Erosion Control) and* ***MCC 29.603*** *Permits (Flood Hazard Regulations).*

Copies of the above referenced code sections are enclosed with the copy of this letter sent via standard mail. Additional copies are available upon request.

This office would like to be able to close the land use complaint case on file for your property. In order to do this, the following corrective actions need to be completed.

**Requested Corrective Actions**

1. **Immediately** cease all non-permitted development activity, including ground disturbing activities and all in-water activities, including excavation, fill material placement or placement of any objects within Fairview Lake adjacent to the subject property, and secure the site with any necessary erosion control measures, such as covering exposed soil with plastic and installing silt fencing to prevent sediment run-off. All activity must cease until such time as the proper permits are obtained.

   **1.1.** Failure to comply with the posted *Stop Work Order* and failure to install erosion control measures may result in the issuance of a *Notice of Violation* and associated civil penalties.

2. **By May 10, 2013,** schedule and attend a Pre-Filing Meeting with the Land Use Planning (LUP) office to prepare for the submission of a *Significant Environmental Concern [SEC] permit* application, a *Grading and Erosion Control [GEC] permit* application and a *Floodplain Development [FD] permit* application to authorize the development activities conducted on the property and the in-water activities conducted within the lake adjacent to the property. To schedule the meeting or if you have any questions regarding any information required for the meeting, please contact either Don Kienholz, Land Use Planner, at (503)-988-5050, extension 29270 or the Land Use Planning office at (503)-988-3043.

   **2.1.** **Within 60 days** of the Pre-Filing Meeting, submit to the LUP office applications for a *SEC permit*, a *GEC permit*, and a *FD permit*.

   **2.2.** In the event your *SEC permit*, *GEC permit* or *FD permit* application(s) are deemed incomplete by staff, **within 60 days** of receiving an incomplete application notification letter from the LUP office, make the permit application(s) complete.

   **2.3.** If the *SEC permit*, *GEC permit* or *FD permit* applications **are not approved** and you have either accepted the decision or have utilized all appeal rights provided by relevant code and statute, then the following needs to be under taken:

      **2.3.1.** **Within 15 days** of the final decision, schedule and attend a meeting with the Code Compliance office to discuss the options available for moving forward with the resolution of this compliance case. Options available might include the removal of all development and improvements and the restoration of the property and adjacent in-water areas, or the submittal of new permit applications to allow some form of the development and improvements to remain.

***-OR-***

**2.4.** If the *SEC permit*, *GEC permit* or *FD permit* applications **are approved**:

**2.4.1. Complete** all work and conditions of approval required by the permit application approvals in the timelines specified by the approvals.

**Voluntary Compliance**

You are asked to voluntarily comply with the Multnomah County Code and corrective actions as described above, and with any corrective actions outlined in any follow-up letters. While this request is for voluntary compliance, you should know that Multnomah County will not allow a continued violation of the law. The Voluntary Compliance process provides an alternative to the County Code Enforcement process.

Please note that when a matter no longer appears to be progressing towards resolution through the voluntary compliance process, the Code Compliance office is authorized to demand compliance and to enforce such demand by imposing civil fines of up to *$3,500 per day, per violation* as long as the violations continue.

Please contact the Land Use Planning office, at (503) 988-3043, with specific questions you may have on land use or permit requirements for your property. Please contact me at (503) 988-5050, extension 26747, if you have any questions regarding this *Stop Work Order Support* letter.

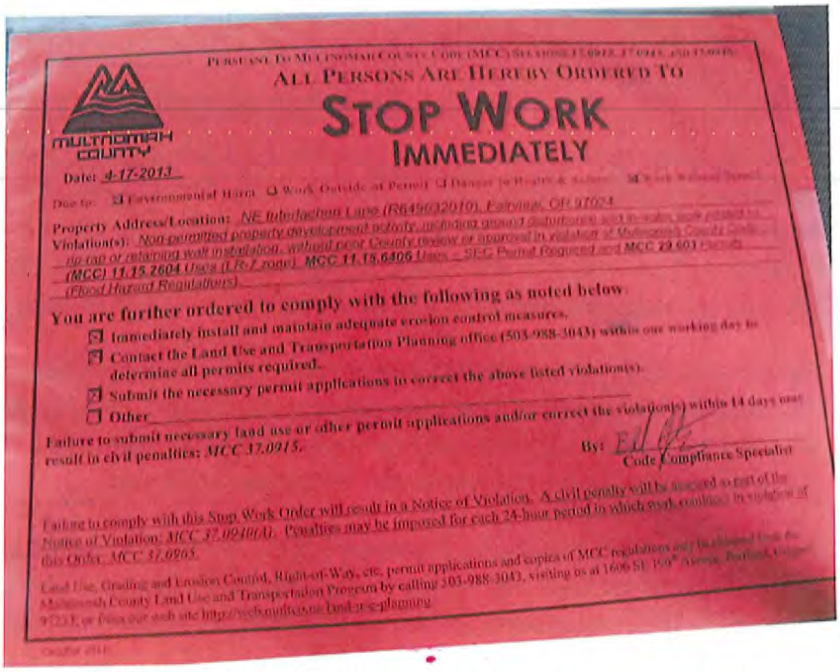
Sincerely,

Bill Gotzinger
Code Compliance Specialist

Attachments: Aerial Map
Site Inspection photographs

Enclosures: MCC 11.15.2602 – .2618
MCC 11.15.6400 – .6428
MCC 29.330 – 29.348
MCC 29.600 – 29.611

## April 17, 2013 - Site Inspection photographs



PURSUANT TO MULTNOMAH COUNTY CODE (MCC) SECTIONS 37.0912, 37.0915, AND 37.0930,

ALL PERSONS ARE HEREBY ORDERED TO

# STOP WORK IMMEDIATELY

MULTNOMAH COUNTY

Date: 4-17-2013

Due to: ☑ Environmental Harm ☐ Work Outside of Permit ☐ Danger to Health & Safety ☐ Work Without Permit

Property Address/Location: NE Interlachen Lane (R649632010), Fairview, OR 97024

Violation(s): Non-permitted property development activity, including ground disturbance and in-water work related to rip-rap or retaining wall installation, without prior County review or approval in violation of Multnomah County Code (MCC) 11.15.2604 Uses (LR-7 zone), MCC 11.15.6406 Uses – SEC, Permit Required and MCC 29.601 Permits (Flood Hazard Regulations)

**You are further ordered to comply with the following as noted below:**

☑ Immediately install and maintain adequate erosion control measures.

☑ Contact the Land Use and Transportation Planning office (503-988-3043) within one working day to determine all permits required.

☑ Submit the necessary permit applications to correct the above listed violation(s).

☐ Other

Failure to submit necessary land use or other permit applications and/or correct the violation(s) within 14 days may result in civil penalties: *MCC 37.0915.*

By: _____ Code Compliance Specialist

Failure to comply with this Stop Work Order will result in a Notice of Violation. A civil penalty will be assessed as part of the Notice of Violation: *MCC 37.0940(A).* Penalties may be imposed for each 24-hour period in which work continues in violation of this Order: *MCC 37.0965.*

Land Use, Grading and Erosion Control, Right-of-Way, etc. permit applications and copies of MCC regulations may be obtained from the Multnomah County Land Use and Transportation Program by calling 503-988-3043, visiting us at 1600 SE 190th Avenue, Portland, Oregon 97233, or from our web site http://web.multco.us/land-use-planning

**1.** Photograph of the Stop Work Order posted for the property on April 17, 2013.

**2.** View of the non-permitted ground disturbance and excavation work conducted on the property and the in-water area of the lake adjacent to the property, looking south.

**3.** Another view of the non-permitted ground disturbance and excavation work conducted on the property and the in-water area of the lake adjacent to the property, looking southeast.


**4.** Another view of the non-permitted ground disturbance and excavation work conducted on the property and the in-water area of the lake adjacent to the property, looking southeast.

# Exhibit 9
# "Code Compliance Procedure" document

Candice
5/14/13

MULTNOMAH COUNTY

# Code Compliance Procedure

## Case Investigation and Voluntary Compliance

Complaint of possible code violation received by Code Compliance Office. Case complaint priority level determined. Priority complaint cases are those regarding **1)** public health, safety and welfare; **2)** imminent threat to the environment; or **3)** a property owner request to resolve a complaint on file.

Code Compliance Office conducts a document investigation of the complaint to verify jurisdiction, zoning, permit status, property ownership, other responsible person(s), identification of applicable code provisions and prior complaint history.

Field investigation conducted to establish the elements of the alleged violation.

If no evidence of a violation is found:

**The case is closed.**

If a Code Violation is verified:

A **Stop Work Order** is posted if needed.

A Request for Voluntary Compliance letter or a letter in support of a Stop Work Order is sent to the property owner/responsible person. The letter outlines the code violations, corrective actions required to resolve the violations and a timeline to complete the corrective actions.

If voluntary compliance is achieved:

**The case is closed.**

If voluntary compliance is not achieved:

**The Enforcement Process is started.**

MULTNOMAH COUNTY

# Code Compliance Procedure

## Enforcement Process, Violation Notice and Appeal

**Order to Comply** letter sent. Property owner or person(s) responsible is required to contact the Land Use Planning office to initiate permit application process or otherwise resolve the code violation.

If voluntary compliance is achieved:

**The case is closed.**

If voluntary compliance is not achieved:

A **Notice of Violation letter** is issued, which includes the assessment of a civil fine.
*There is an opportunity provided to file an appeal of Notice of Violation.*

If an appeal is not filed:

A **Hearings Officer** will issue an order of civil fine.

Fines and costs are payable on effective date of final order; fines and costs not paid within 60 days results in the civil fine being recorded as a property lien by the County Clerk.

If an appeal is filed:

A **Hearings Officer** will affirm or dismiss the violation and fine.

Any appeal of a Hearings Officer's final order shall be reviewed in Oregon Circuit Court or by the Columbia River Gorge Commission.

# Exhibit 10
# Email from the County to the EPA Inspection Team regarding the Interlachen Community undeveloped residential lot dated May 22, 2013

**Candice Owen**

| | |
|---|---|
| **From:** | Roy IWAI <roy.iwai@multco.us> |
| **Sent:** | Wednesday, May 15, 2013 5:01 PM |
| **To:** | Candice Owen; Congdon, Julie |
| **Subject:** | Fwd: Compliance property in Interlachen |
| **Attachments:** | UR.2013.2844--SWO Support ltr 4.18.13.pdf |

Candice, Julie -

Here's the stop work order and update from our Code Compliance Office on that unpermitted construction site in Interlachen.

- Roy

**Roy Iwai** | **(503) 988-5050 ext 28031** | *Water Quality Program* | *Multnomah County Road Services* | *Twitter*

---------- Forwarded message ----------
From: **Bill GOTZINGER** <bill.gotzinger@multco.us>
Date: Wed, May 15, 2013 at 3:51 PM
Subject: Compliance property in Interlachen
To: Roy IWAI <roy.iwai@multco.us>
Cc: Michael GRIMMETT <michael.v.grimmett@multco.us>

Roy,

Attached is a copy of the compliance letter that was sent to the property owners. I am working on a site inspection for the property, but it is not ready yet. Let me know if you want a copy.

The contractor for the property met with the Planning staff and picked up the applications for a GEC permit and a Floodplain Development permit, but the Pre-Filing Meeting has not been attended yet.

If you have any questions, let me know.

*Bill Gotzinger*
Code Compliance Specialist
Multnomah County
Land Use & Transportation Program

1600 SE 190th Ave.
Portland, OR 97233
Phone: (503)-988-5050 ext. 26747
Fax: (503)-988-3389

# Exhibit 11
# County "Erosion Control Inspection Form"

MULTNOMAH COUNTY

# MULTNOMAH COUNTY OREGON

**LAND USE AND TRANSPORTATION PROGRAM**
1600 SE 190TH Avenue Portland, OR 97233
PH: 503-988-3043 FAX: 503-988-3389
http://www.co.multnomah.or.us/landuse

CAO
5/14/13

CALL AFTER DATE:

PHONE:

# EROSION CONTROL INSPECTION FORM

## Property Information

Property Address: Tax Account Number: R

Associated Cases:

Met with:

County Inspector:

Project Description:

| Inspection | Date | Result | |
|---|---|---|---|
| Initial | | ☐ (Pass) | ☐ (Re-inspection Required) |
| Final | | ☐ (Pass) | ☐ (Re-inspection Required) |
| Other | | | |

## Site Observations

## Follow up Requirements